Come live the legend!
LAWRENCEVILLE
THE HISTORIC HOME OF BRUNSWICK COURTHOUSE, VIRGINIA

March 7, 2012

Mr. Curtis J. Linderman, P. E.
Department of Environmental Quality
4949-A Cox Road
Glen Allen, VA 23060

RE: Discharge Permit Renewal Lawrenceville Wastewater Plant (VA0020354)

Dear Mr. Linderman:

The current effective VPDES permit for the Lawrenceville WWTP (#0020354) expires on September 10, 2012. The Town of Lawrenceville is submitting a completed permit renewal application along with several requests for waivers.

Per 9 VAC25-31-100, the Town of Lawrenceville requests your permission and the EPA's permission to grant the following waivers as the Town has completed and is now submitting the permit renewal application:

a) The Town has successfully completed the scans of the plant's effluent. As requested in my letter of January 24, 2012, and the discussions that followed with Jeremy Kazio, the Town is requesting that the maximum length of eight months between scans be waived. The results of the scans are included as Attachment # C as part of our application.
b) The Town requests a reduction in the frequency of testing for the renewed permit. The WWTP has consistently performed below the standards in effect today. The testing is not only a financial drain on our small rural Town, but is very labor intensive and requires the hiring of an outside laboratory for testing that is more sophisticated than the Lawrenceville Lab is equipped to test. The performance of the Lawrenceville WWTP has been a constant to the design and effort put forth by the engineers and the operators. The one factor that the plant has no control over is the weather. Millions of dollars have been spent to correct I & I on the Town's aging system, but I & I still exist. Since the Town has made many efforts to upgrade the plant, replace aging lines, and keep costs to the customers reasonable, I request a reduction in frequency for the parameters that are tested more than once a month for the upcoming permit (the parameters would include CBOD, DO, pH, E. Coliform, TKN). The past plant performance demonstrates that

a reduction in the testing frequency will not reduce the quality of effluent discharged from the Lawrenceville WWTP.

c) The Town of Lawrenceville requests removal of the Total Recoverable Zinc testing of every six months. I respectfully request that the DEQ staff perform a statistical evaluation of the Total Recoverable Zinc data and discontinue the testing in the upcoming permit. The Total Recoverable Zinc testing is not necessary; the Town has shown compliance with the standard for protecting water quality in Roses Creek. The Town has also evaluated our customer base and found no industrial dischargers. The Town will continue to evaluate existing and future customers. The Town will keep DEQ informed of any customer that proposes to connect to the Town's collection system and will be a discharger of zinc.

d) The Town of Lawrenceville requests a reduction in the number of hours that the WWTP is manned. I request that the plant be manned eight hours a day seven days a week. The plant is automated and all major functions of the plant are connected to the auto dialer that will notify operators of any malfunctions.

I realize that this permit renewal along with above waivers are very time sensitive in nature because of the requirement of EPA's approval. Therefore, please keep me apprised of the waiver requests.

Thank you in advance for the consideration that you and the staff at DEQ will give this permit renewal.

If you should have any questions, or need any additional information, please call me.

With Regards,

C. J. Dean, Town Manager

cc: Robert Williams, WWTP Chief Operator

Disclaimer

This is an updated PDF document that allows you to type your information directly into the form and to save the completed form. This form is the most updated form currently available.

Note: This form can be viewed and saved only using Adobe Acrobat Reader version 7.0 or higher, or if you have the full Adobe Professional version.

Instructions:

1. Type in your information
2. Save file (if desired)
3. Print the completed form
4. Sign and date the printed copy
5. Mail it to the directed contact.

FACILITY NAME AND PERMIT NUMBER:
TOWN OF LAWRENCEVILLE, VA 0020354

Form Approved 1/14/99
OMB Number 2040-0086

FORM 2A NPDES

NPDES FORM 2A APPLICATION OVERVIEW

APPLICATION OVERVIEW

Form 2A has been developed in a modular format and consists of a "Basic Application Information" packet and a "Supplemental Application Information" packet. The Basic Application Information packet is divided into two parts. All applicants must complete Parts A and C. Applicants with a design flow greater than or equal to 0.1 mgd must also complete Part B. Some applicants must also complete the Supplemental Application Information packet. The following items explain which parts of Form 2A you must complete.

BASIC APPLICATION INFORMATION:

A. **Basic Application Information for all Applicants.** All applicants must complete questions A.1 through A.8. A treatment works that discharges effluent to surface waters of the United States must also answer questions A.9 through A.12.

B. **Additional Application Information for Applicants with a Design Flow ≥ 0.1 mgd.** All treatment works that have design flows greater than or equal to 0.1 million gallons per day must complete questions B.1 through B.6.

C. **Certification.** All applicants must complete Part C (Certification).

SUPPLEMENTAL APPLICATION INFORMATION:

D. **Expanded Effluent Testing Data.** A treatment works that discharges effluent to surface waters of the United States and meets one or more of the following criteria must complete Part D (Expanded Effluent Testing Data):

1. Has a design flow rate greater than or equal to 1 mgd,
2. Is required to have a pretreatment program (or has one in place), or
3. Is otherwise required by the permitting authority to provide the information.

E. **Toxicity Testing Data.** A treatment works that meets one or more of the following criteria must complete Part E (Toxicity Testing Data):

1. Has a design flow rate greater than or equal to 1 mgd,
2. Is required to have a pretreatment program (or has one in place), or
3. Is otherwise required by the permitting authority to submit results of toxicity testing.

F. **Industrial User Discharges and RCRA/CERCLA Wastes.** A treatment works that accepts process wastewater from any significant industrial users (SIUs) or receives RCRA or CERCLA wastes must complete Part F (Industrial User Discharges and RCRA/CERCLA Wastes). SIUs are defined as:

1. All industrial users subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations (CFR) 403.6 and 40 CFR Chapter I, Subchapter N (see instructions); and
2. Any other industrial user that:
   a. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions); or
   b. Contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or
   c. Is designated as an SIU by the control authority.

G. **Combined Sewer Systems.** A treatment works that has a combined sewer system must complete Part G (Combined Sewer Systems).

ALL APPLICANTS MUST COMPLETE PART C (CERTIFICATION)

Form Approved 1/14/99
OMB Number 2040-0086

BASIC APPLICATION INFORMATION

PART A. BASIC APPLICATION INFORMATION FOR ALL APPLICANTS:

All treatment works must complete questions A.1 through A.8 of this Basic Application Information packet.

A.1. Facility Information.

Facility name: Town of Lawrenceville

Mailing Address: 400 North Main Street, Lawrenceville, VA 23868

Contact person: C.J. Dean

Title: Town Manager

Telephone number: (434) 848-2414

Facility Address (not P.O. Box): 380 Meadow Lane, Lawrenceville, VA 23868

A.2. Applicant Information. If the applicant is different from the above, provide the following:

Applicant name: Same

Mailing Address:

Contact person:

Title:

Telephone number:

Is the applicant the owner or operator (or both) of the treatment works?

✓ owner ✓ operator

Indicate whether correspondence regarding this permit should be directed to the facility or the applicant.

_____ facility ✓ applicant

A.3. Existing Environmental Permits. Provide the permit number of any existing environmental permits that have been issued to the treatment works (include state-issued permits).

NPDES: VA 0020354
UIC:
RCRA:
PSD:
Other:
Other:

A.4. Collection System Information. Provide information on municipalities and areas served by the facility. Provide the name and population of each entity and, if known, provide information on the type of collection system (combined vs. separate) and its ownership (municipal, private, etc.).

Name	Population Served	Type of Collection System	Ownership
Town of Lawrenceville and Brunswick County	4600	separate	municipal

Total population served 4600

A.5. Indian Country.

a. Is the treatment works located in Indian Country?

_____ Yes ✓ No

b. Does the treatment works discharge to a receiving water that is either in Indian Country or that is upstream from (and eventually flows through) Indian Country?

_____ Yes ✓ No

A.6. Flow. Indicate the design flow rate of the treatment plant (i.e., the wastewater flow rate that the plant was built to handle). Also provide the average daily flow rate and maximum daily flow rate for each of the last three years. Each year's data must be based on a 12-month time period with the 12th month of "this year" occurring no more than three months prior to this application submittal.

a. Design flow rate 1.2 mgd

	Two Years Ago	Last Year	This Year	
b. Annual average daily flow rate	0.803158	0.701019	0.541181	mgd
c. Maximum daily flow rate	2.615280	2.847050	1.546620	mgd

A.7. Collection System. Indicate the type(s) of collection system(s) used by the treatment plant. Check all that apply. Also estimate the percent contribution (by miles) of each.

✓ Separate sanitary sewer 100 %

_____ Combined storm and sanitary sewer _____ %

A.8. Discharges and Other Disposal Methods.

a. Does the treatment works discharge effluent to waters of the U.S.? ✓ Yes _____ No

If yes, list how many of each of the following types of discharge points the treatment works uses:

i. Discharges of treated effluent ONE

ii. Discharges of untreated or partially treated effluent ZERO

iii. Combined sewer overflow points ZERO

iv. Constructed emergency overflows (prior to the headworks) ZERO

v. Other _____ N/A

b. Does the treatment works discharge effluent to basins, ponds, or other surface impoundments that do not have outlets for discharge to waters of the U.S.? _____ Yes ✓ No

If yes, provide the following for each surface impoundment:

Location: _____

Annual average daily volume discharged to surface impoundment(s) _____ mgd

Is discharge _____ continuous or _____ intermittent?

c. Does the treatment works land-apply treated wastewater? _____ Yes ✓ No

If yes, provide the following for each land application site:

Location: _____

Number of acres: _____

Annual average daily volume applied to site: _____ Mgd

Is land application _____ continuous or _____ intermittent?

d. Does the treatment works discharge or transport treated or untreated wastewater to another treatment works? _____ Yes ✓ No

If yes, describe the mean(s) by which the wastewater from the treatment works is discharged or transported to the other treatment works (e.g., tank truck, pipe).

_____

If transport is by a party other than the applicant, provide:

Transporter name: _____

Mailing Address: _____

_____

Contact person: _____

Title: _____

Telephone number: _____

For each treatment works that receives this discharge, provide the following:

Name: _____

Mailing Address: _____

_____

Contact person: _____

Title: _____

Telephone number: _____

If known, provide the NPDES permit number of the treatment works that receives this discharge. _____

Provide the average daily flow rate from the treatment works into the receiving facility. _____ mgd

e. Does the treatment works discharge or dispose of its wastewater in a manner not included in A.8.a through A.8.d above (e.g., underground percolation, well injection)? _____ Yes ✓ No

If yes, provide the following for each disposal method:

Description of method (including location and size of site(s) if applicable):

_____

Annual daily volume disposed of by this method: _____

Is disposal through this method _____ continuous or _____ intermittent?

WASTEWATER DISCHARGES:

If you answered "yes" to question A.8.a, complete questions A.9 through A.12 **once for each outfall** (including bypass points) through which effluent is discharged. Do not include information on combined sewer overflows in this section. **If you answered "no" to question A.8.a**, go to Part B, "Additional Application Information for Applicants with a Design Flow Greater than or Equal to 0.1 mgd."

A.9. Description of Outfall.

a. Outfall number: 001

b. Location:
Lawrenceville (City or town, if applicable) — 23868 (Zip Code)
Brunswick (County) — VA (State)
36 44 37 (Latitude) — -77 50 10 (Longitude)

c. Distance from shore (if applicable): N/A ft.

d. Depth below surface (if applicable): N/A ft.

e. Average daily flow rate: 1.2 design mgd

f. Does this outfall have either an intermittent or a periodic discharge? ____ Yes ✓ No (go to A.9.g.)

If yes, provide the following information:

Number of times per year discharge occurs: ____

Average duration of each discharge: ____

Average flow per discharge: ____ mgd

Months in which discharge occurs: ____

g. Is outfall equipped with a diffuser? ____ Yes ✓ No

A.10. Description of Receiving Waters.

a. Name of receiving water: Rose Creek

b. Name of watershed (if known): Chowan River Basin

United States Soil Conservation Service 14-digit watershed code (if known): unknown

c. Name of State Management/River Basin (if known): Chowan River Dismal Swamp

United States Geological Survey 8-digit hydrologic cataloging unit code (if known): unknown

d. Critical low flow of receiving stream (if applicable):
acute unknown cfs chronic unknown cfs

e. Total hardness of receiving stream at critical low flow (if applicable): unknown mg/l of $CaCO_3$

FACILITY NAME AND PERMIT NUMBER:
TOWN OF LAWRENCEVILLE, VA 0020354

Form Approved 1/14/99
OMB Number 2040-0086

A.11. Description of Treatment.

a. What levels of treatment are provided? Check all that apply.

✓ Primary ✓ Secondary

____ Advanced ____ Other. Describe: ____

b. Indicate the following removal rates (as applicable):

Design BOD_5 removal or Design $CBOD_5$ removal	96 %
Design SS removal	92 %
Design P removal	N/A %
Design N removal	N/A %
Other ____	____ %

c. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe.

Ultra Violet Light

If disinfection is by chlorination, is dechlorination used for this outfall? ____ Yes ____ No

d. Does the treatment plant have post aeration? ✓ Yes ____ No

A.12. Effluent Testing Information. All Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three samples and must be no more than four and one-half years apart.

Outfall number: 001

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	6.24	s.u.			
pH (Maximum)	8.24	s.u.			
Flow Rate	2.847050	MGD	0.715074	MGD	1826
Temperature (Winter)	19.4	C	13.4	C	Daily/Permit
Temperature (Summer)	28.7	C	25.9	C	Daily/Permit

* For pH please report a minimum and a maximum daily value

POLLUTANT		MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
		Conc.	Units	Conc.	Units	Number of Samples		
CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.								
BIOCHEMICAL OXYGEN	BOD-5							
DEMAND (Report one)	CBOD-5	31.00	mg/l	0.62	mg/l	417	SM5210	5 mg/l
FECAL COLIFORM		888	cfu/100mL	19	cfu/100mL	1290	SM 9223	1cfu/100mL
TOTAL SUSPENDED SOLIDS (TSS)		158.93	mg/l	9.78	mg/l	394	EPA160.2	5 mg/l

END OF PART A.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

BASIC APPLICATION INFORMATION

PART B. ADDITIONAL APPLICATION INFORMATION FOR APPLICANTS WITH A DESIGN FLOW GREATER THAN OR EQUAL TO 0.1 MGD (100,000 gallons per day).

All applicants with a design flow rate ≥ 0.1 mgd must answer questions B.1 through B.6. All others go to Part C (Certification).

B.1. Inflow and Infiltration. Estimate the average number of gallons per day that flow into the treatment works from inflow and/or infiltration.

30,000-100,000 gpd

Briefly explain any steps underway or planned to minimize inflow and infiltration.

During past several years, Lawrenceville has replaced collection lines through the sale of bonds and grants.

B.2. Topographic Map. Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information. (You may submit more than one map if one map does not show the entire area.) ATTACHMENT A

a. The area surrounding the treatment plant, including all unit processes.

b. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.

c. Each well where wastewater from the treatment plant is injected underground.

d. Wells, springs, other surface water bodies, and drinking water wells that are: 1) within 1/4 mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.

e. Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.

f. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored, and/or disposed.

B.3. Process Flow Diagram or Schematic. Provide a diagram showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. Also provide a water balance showing all treatment units, including disinfection (e.g, chlorination and dechlorination). The water balance must show daily average flow rates at influent and discharge points and approximate daily flow rates between treatment units. Include a brief narrative description of the diagram. ATTACHMENT B

B.4. Operation/Maintenance Performed by Contractor(s).

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of a contractor? ____Yes ✓No

If yes, list the name, address, telephone number, and status of each contractor and describe the contractor's responsibilities (attach additional pages if necessary).

Name: _____

Mailing Address: _____

_____

Telephone Number: _____

Responsibilities of Contractor: _____

B.5. Scheduled Improvements and Schedules of Implementation. Provide information on any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses to question B.5 for each. (If none, go to question B.6.)

a. List the outfall number (assigned in question A.9) for each outfall that is covered by this implementation schedule.

N/A

b. Indicate whether the planned improvements or implementation schedule are required by local, State, or Federal agencies.

____Yes ____No

c If the answer to B.5.b is "Yes," briefly describe, including new maximum daily inflow rate (if applicable).

_____

d. Provide dates imposed by any compliance schedule or any actual dates of completion for the implementation steps listed below, as applicable. For improvements planned independently of local, State, or Federal agencies, indicate planned or actual completion dates, as applicable. Indicate dates as accurately as possible.

Implementation Stage	Schedule MM / DD / YYYY	Actual Completion MM / DD / YYYY
– Begin construction	___/___/_____	___/___/_____
– End construction	___/___/_____	___/___/_____
– Begin discharge	___/___/_____	___/___/_____
– Attain operational level	___/___/_____	___/___/_____

e. Have appropriate permits/clearances concerning other Federal/State requirements been obtained? ____Yes ____No

Describe briefly: _____

_____

B.6. EFFLUENT TESTING DATA (GREATER THAN O.1 MGD ONLY).

Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall Number: 001 ATTACHMENT C

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
	Conc.	Units	Conc.	Units	Number of Samples		
CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.							
AMMONIA (as N)	3.00	mg/l	0.84	mg/l	23	EPA 350.1	0.20 mg/l
CHLORINE (TOTAL RESIDUAL, TRC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DISSOLVED OXYGEN	12.06	mg/l	8.33	mg/l	1826	SM 4500-0	0.0 mg/l
TOTAL KJELDAHL NITROGEN (TKN)	2.13	mg/l	1.39	mg/l	572	EPA 351.2	0.50 mg/l
NITRATE PLUS NITRITE NITROGEN	1.28	mg/l	1.06	mg/l	3	EPA 353.2	0.50 mg/l
OIL and GREASE	6.4	mg/l	5.5	mg/l	3	EPA 1664A	5.0 mg/l
PHOSPHORUS (Total)	0.28	mg/l	0.23	mg/l	3	EPA 365.1	0.20 mg/l
TOTAL DISSOLVED SOLIDS (TDS)	223	mg/l	213.67	mg/l	3	SM 2540C	1.0 mg/l
OTHER	N/A	N/A	N/A	N/A	N/A	N/A	N/A

END OF PART B.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

FACILITY NAME AND PERMIT NUMBER:
TOWN OF LAWRENCEVILLE, VA 0020354

Form Approved 1/14/99
OMB Number 2040-0086

BASIC APPLICATION INFORMATION

PART C. CERTIFICATION

All applicants must complete the Certification Section. Refer to instructions to determine who is an officer for the purposes of this certification. All applicants must complete all applicable sections of Form 2A, as explained in the Application Overview. Indicate below which parts of Form 2A you have completed and are submitting. By signing this certification statement, applicants confirm that they have reviewed Form 2A and have completed all sections that apply to the facility for which this application is submitted.

Indicate which parts of Form 2A you have completed and are submitting:

✓ Basic Application Information packet

Supplemental Application Information packet:

✓ Part D (Expanded Effluent Testing Data)

✓ Part E (Toxicity Testing: Biomonitoring Data)

_____ Part F (Industrial User Discharges and RCRA/CERCLA Wastes)

_____ Part G (Combined Sewer Systems)

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and official title: C.J. Dean Town Manager

Signature: C.J. Dean

Telephone number: (434) 848-2414

Date signed: March 6, 2012

Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

SEND COMPLETED FORMS TO:

Form Approved 1/14/99
OMB Number 2040-0086

SUPPLEMENTAL APPLICATION INFORMATION

PART D. EXPANDED EFFLUENT TESTING DATA

Refer to the directions on the cover page to determine whether this section applies to the treatment works.

Effluent Testing: 1.0 mgd and Pretreatment Treatment Works. If the treatment works has a design flow greater than or equal to 1.0 mgd or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information and any other information required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analyses conducted using 40 CFR Part 136 methods. In addition, these data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. Indicate in the blank rows provided below any data you may have on pollutants not specifically listed in this form. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old. ATTACHMent C

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS, AND HARDNESS.											
ANTIMONY	<0.50	ug/L	< Q/L	g/d	<0.50	ug/L	< Q/L	g/d	4	EPA 200.8	0.50 ug/l
ARSENIC	<1.0	ug/L	< Q/L	g/d	<1.0	ug/L	< Q/L	g/d	4	EPA 200.8	1.0 ug/l
BERYLLIUM	<.10	ug/L	< Q/L	g/d	<.10	ug/L	< Q/L	g/d	4	EPA 200.8	0.1 ug/l
CADMIUM	<.10	ug/L	< Q/L	g/d	<.10	ug/L	< Q/L	g/d	4	EPA 200.8	0.1 ug/l
CHROMIUM	<1.0	ug/L	< Q/L	g/d	<1.0	ug/L	< Q/L	g/d	4	EPA 200.8	1.0 ug/l
COPPER	7.39	ug/L	20.00	g/d	3.085	ug/L	8.35	g/d	4	EPA 200.8	0.10 UG/L
LEAD	0.56	ug/L	1.516	g/d	0.14	ug/L	0.379	g/d	4	EPA 200.8	0.10 ug/l
MERCURY	<.10	ug/L	< Q/L	g/d	<.10	ug/L	< Q/L	g/d	4	EPA 245.1	0.10 ug/L
NICKEL	0.98	ug/L	2.652	g/d	0.555	ug/L	1.502	g/d	4	EPA 200.8	0.50 ug/l
SELENIUM	<.50	ug/L	< Q/L	g/d	<.50	ug/L	< Q/L	g/d	4	EPA 200.8	0.50 ug/l
SILVER	<.05	ug/L	< Q/L	g/d	<.05	ug/L	< Q/L	g/d	4	EPA 200.8	0.05 ug/l
THALLIUM	<.10	ug/L	< Q/L	g/d	<.10	ug/L	< Q/L	g/d	4	EPA 200.8	0.10 ug/l
ZINC	36	ug/L	97.44	g/d	26.48	ug/L	71.67	g/d	14	EPA 200.8	1.0 ug/l
CYANIDE	<10	ug/L	< Q/L	g/d	<10	ug/l	< Q/L	g/d	4	EPA 335.3	10 ug/l
TOTAL PHENOLIC COMPOUNDS	< 0.05	ug/l	< Q/L	g/d	<0.05	ug/l	< Q/L	g/d	4	EPA 420.2	0.05 ug/l
HARDNESS (AS $CaCO_3$)	39.5	mg/l	106.9	g/d	38.07	mg/l	103.0	g/d	3	SM 2340B	0.1 mg/l
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer.											

FACILITY NAME AND PERMIT NUMBER:
TOWN OF LAWRENCEVILLE, VA 0020354

Form Approved 1/14/99
OMB Number 2040-0086

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
VOLATILE ORGANIC COMPOUNDS.											
ACROLEIN	<50.0	ug/L	< Q/L	g/d	<50.0	ug/L	<Q/L	g/d	3	EPA 624	50 ug/l
ACRYLONITRILE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
BENZENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
BROMOFORM	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
CARBON TETRACHLORIDE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
CLOROBENZENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
CHLORODIBROMO-METHANE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
CHLOROETHANE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
2-CHLORO-ETHYLVINYL ETHER	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
CHLOROFORM	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
DICHLOROBROMO-METHANE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
1,1-DICHLOROETHANE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
1,2-DICHLOROETHANE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
TRANS-1,2-DICHLORO-ETHYLENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
1,1-DICHLOROETHYLENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
1,2-DICHLOROPROPANE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
1,3-DICHLORO-PROPYLENE	<20.0	ug/L	< Q/L	g/d	<20.0	ug/L	< Q/L	g/d	3	EPA 624	20 ug/l
ETHYLBENZENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
METHYL BROMIDE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
METHYL CHLORIDE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
METHYLENE CHLORIDE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
1,1,2,2-TETRACHLORO-ETHANE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
TETRACHLORO-ETHYLENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
TOLUENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l

FACILITY NAME AND PERMIT NUMBER:
TOWN OF LAWRENCEVILLE, VA 0020354

Form Approved 1/14/99
OMB Number 2040-0086

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
1,1,1-TRICHLOROETHANE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
1,1,2-TRICHLOROETHANE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
TRICHLORETHYLENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
VINYL CHLORIDE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 624	10 ug/l
Use this space (or a separate sheet) to provide information on other volatile organic compounds requested by the permit writer.											
ACID-EXTRACTABLE COMPOUNDS											
P-CHLORO-M-CRESOL	<10.0	ug/l	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
2-CHLOROPHENOL	<10.0	ug/l	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
2,4-DICHLOROPHENOL	<10.0	ug/l	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
2,4-DIMETHYLPHENOL	<10.0	ug/l	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
4,6-DINITRO-O-CRESOL	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
2,4-DINITROPHENOL	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
2-NITROPHENOL	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
4-NITROPHENOL	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
PENTACHLOROPHENOL	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
PHENOL	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
2,4,6-TRICHLOROPHENOL	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
Use this space (or a separate sheet) to provide information on other acid-extractable compounds requested by the permit writer.											
BASE-NEUTRAL COMPOUNDS.											
ACENAPHTHENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
ACENAPHTHYLENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
ANTHRACENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
BENZIDINE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
BENZO(A)ANTHRACENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l
BENZO(A)PYRENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/L	< Q/L	g/d	3	EPA 625	10 ug/l

FACILITY NAME AND PERMIT NUMBER:
TOWN OF LAWRENCEVILLE, VA 0020354

Form Approved 1/14/99
OMB Number 2040-0086

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
3,4 BENZO-FLUORANTHENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
BENZO(GHI)PERYLENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
BENZO(K)FLUORANTHENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
BIS (2-CHLOROETHOXY) METHANE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
BIS (2-CHLOROETHYL)-ETHER	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
BIS (2-CHLOROISO-PROPYL) ETHER	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
BIS (2-ETHYLHEXYL) PHTHALATE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
4-BROMOPHENYL PHENYL ETHER	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
BUTYL BENZYL PHTHALATE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
2-CHLORONAPHTHALENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
4-CHLORPHENYL PHENYL ETHER	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
CHRYSENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
DI-N-BUTYL PHTHALATE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
DI-N-OCTYL PHTHALATE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
DIBENZO(A,H) ANTHRACENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
1,2-DICHLOROBENZENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
1,3-DICHLOROBENZENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
1,4-DICHLOROBENZENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
3,3-DICHLOROBENZIDINE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
DIETHYL PHTHALATE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
DIMETHYL PHTHALATE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
2,4-DINITROTOLUENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
2,6-DINITROTOLUENE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
1,2-DIPHENYLHYDRAZINE	<10.0	ug/L	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l

FACILITY NAME AND PERMIT NUMBER:
TOWN OF LAWRENCEVILLE, VA 0020354

Form Approved 1/14/99
OMB Number 2040-0086

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
FLUORANTHENE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
FLUORENE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
HEXACHLOROBENZENE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
HEXACHLOROBUTADIENE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
HEXACHLOROCYCLO-PENTADIENE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
HEXACHLOROETHANE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
INDENO(1,2,3-CD)PYRENE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
ISOPHORONE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
NAPHTHALENE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
NITROBENZENE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
N-NITROSODI-N-PROPYLAMINE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
N-NITROSODI- METHYLAMINE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
N-NITROSODI-PHENYLAMINE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
PHENANTHRENE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
PYRENE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
1,2,4-TRICHLOROBENZENE	<10.0	ug/l	< Q/L	g/d	<10.0	ug/l	< Q/L	g/d	3	EPA 625	10 ug/l
Use this space (or a separate sheet) to provide information on other base-neutral compounds requested by the permit writer.											
Use this space (or a separate sheet) to provide information on other pollutants (e.g., pesticides) requested by the permit writer.											

END OF PART D.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

FACILITY NAME AND PERMIT NUMBER:
TOWN OF LAWRENCEVILLE, VA 0020354

Form Approved 1/14/99
OMB Number 2040-0086

SUPPLEMENTAL APPLICATION INFORMATION

PART E. TOXICITY TESTING DATA

POTWs meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points: 1) POTWs with a design flow rate greater than or equal to 1.0 mgd; 2) POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403); or 3) POTWs required by the permitting authority to submit data for these parameters.

- At a minimum, these results must include quarterly testing for a 12-month period within the past 1 year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute and/or chronic toxicity, depending on the range of receiving water dilution. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
- In addition, submit the results of any other whole effluent toxicity tests from the past four and one-half years. If a whole effluent toxicity test conducted during the past four and one-half years revealed toxicity, provide any information on the cause of the toxicity or any results of a toxicity reduction evaluation, if one was conducted.
- If you have already submitted any of the information requested in Part E, you need not submit it again. Rather, provide the information requested in question E.4 for previously submitted information. If EPA methods were not used, report the reasons for using alternate methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E.

If no biomonitoring data is required, do not complete Part E. Refer to the Application Overview for directions on which other sections of the form to complete.

E.1. Required Tests. ATTACHMENT D

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years.

✓ chronic ✓ acute

E.2. Individual Test Data. Complete the following chart for each whole effluent toxicity test conducted in the last four and one-half years. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.

	Test number:_____	Test number:_____	Test number:_____
a. Test information.			
Test species & test method number			
Age at initiation of test			
Outfall number			
Dates sample collected			
Date test started			
Duration			
b. Give toxicity test methods followed.			
Manual title			
Edition number and year of publication			
Page number(s)			
c. Give the sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used.			
24-Hour composite			
Grab			
d. Indicate where the sample was taken in relation to disinfection. (Check all that apply for each)			
Before disinfection			
After disinfection			
After dechlorination			

	Test number:_____	Test number:_____	Test number:_____
e. Describe the point in the treatment process at which the sample was collected.			
Sample was collected:			
f. For each test, include whether the test was intended to assess chronic toxicity, acute toxicity, or both.			
Chronic toxicity			
Acute toxicity			
g. Provide the type of test performed.			
Static			
Static-renewal			
Flow-through			
h. Source of dilution water. If laboratory water, specify type; if receiving water, specify source.			
Laboratory water			
Receiving water			
i. Type of dilution water. It salt water, specify "natural" or type of artificial sea salts or brine used.			
Fresh water			
Salt water			
j. Give the percentage effluent used for all concentrations in the test series.			
k. Parameters measured during the test. (State whether parameter meets test method specifications)			
pH			
Salinity			
Temperature			
Ammonia			
Dissolved oxygen			
l. Test Results.			
Acute:			
Percent survival in 100% effluent	%	%	%
LC_{50}			
95% C.I.	%	%	%
Control percent survival	%	%	%
Other (describe)			

Chronic:			
NOEC	%	%	%
IC_{25}	%	%	%
Control percent survival	%	%	%
Other (describe)			
m. Quality Control/Quality Assurance.			
Is reference toxicant data available?			
Was reference toxicant test within acceptable bounds?			
What date was reference toxicant test run (MM/DD/YYYY)?			
Other (describe)			

E.3. Toxicity Reduction Evaluation. Is the treatment works involved in a Toxicity Reduction Evaluation?

____Yes ✓ No If yes, describe: _____

E.4. Summary of Submitted Biomonitoring Test Information. If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.

Date submitted: 09/08/2008 (MM/DD/YYYY)

Summary of results: (see instructions)

Tests results submitted 9/8/2008, 9/8/2009, 10/8/2010, 9/9/2011, & 1/9/12, all tests results were 100% NOEC and 1.0 TC, except 2011 results which were <33% NOEC and >3.03 TU

END OF PART E.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.

SUPPLEMENTAL APPLICATION INFORMATION

PART F. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete Part F.

GENERAL INFORMATION:

F.1. Pretreatment Program. Does the treatment works have, or is it subject to, an approved pretreatment program?

____Yes ✓ No

F.2. Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs). Provide the number of each of the following types of industrial users that discharge to the treatment works.

a. Number of non-categorical SIUs. 0

b. Number of CIUs. 0

SIGNIFICANT INDUSTRIAL USER INFORMATION:

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, copy questions F.3 through F.8 and provide the information requested for each SIU.

F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: N/A

Mailing Address: _____

_____

F.4. Industrial Processes. Describe all of the industrial processes that affect or contribute to the SIU's discharge.

_____

F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): _____

Raw material(s): _____

F.6. Flow Rate.

a. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

_____ gpd (_____continuous or _____intermittent)

b. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

_____ gpd (_____continuous or _____intermittent)

F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local limits ____Yes ____No

b. Categorical pretreatment standards ____Yes ____No

If subject to categorical pretreatment standards, which category and subcategory?

_____

F.8. Problems at the Treatment Works Attributed to Waste Discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

____Yes____No If yes, describe each episode.

RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE:

F.9. RCRA Waste. Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail, or dedicated pipe? ____Yes ✓No (go to F.12.)

F.10. Waste Transport. Method by which RCRA waste is received (check all that apply):

_____Truck _____Rail _____Dedicated Pipe

F.11. Waste Description. Give EPA hazardous waste number and amount (volume or mass, specify units).

EPA Hazardous Waste Number	Amount	Units

CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER:

F.12. Remediation Waste. Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities?

____Yes (complete F.13 through F.15.) ✓No

Provide a list of sites and the requested information (F.13 - F.15.) for each current and future site.

F.13. Waste Origin. Describe the site and type of facility at which the CERCLA/RCRA/or other remedial waste originates (or is expected to originate in the next five years).

F.14. Pollutants. List the hazardous constituents that are received (or are expected to be received). Include data on volume and concentration, if known. (Attach additional sheets if necessary).

F.15. Waste Treatment.

a. Is this waste treated (or will it be treated) prior to entering the treatment works?

____Yes ____No

If yes, describe the treatment (provide information about the removal efficiency):

b. Is the discharge (or will the discharge be) continuous or intermittent?

____Continuous ____Intermittent If intermittent, describe discharge schedule.

END OF PART F.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

SUPPLEMENTAL APPLICATION INFORMATION

PART G. COMBINED SEWER SYSTEMS

If the treatment works has a combined sewer system, complete Part G.

G.1. System Map. Provide a map indicating the following: (may be included with Basic Application Information)

a. All CSO discharge points.

b. Sensitive use areas potentially affected by CSOs (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems, and outstanding natural resource waters).

c. Waters that support threatened and endangered species potentially affected by CSOs.

G.2. System Diagram. Provide a diagram, either in the map provided in G.1. or on a separate drawing, of the combined sewer collection system that includes the following information:

a. Locations of major sewer trunk lines, both combined and separate sanitary.

b. Locations of points where separate sanitary sewers feed into the combined sewer system.

c. Locations of in-line and off-line storage structures.

d. Locations of flow-regulating devices.

e. Locations of pump stations.

CSO OUTFALLS:

Complete questions G.3 through G.6 once for each CSO discharge point.

G.3. Description of Outfall.

a. Outfall number N/A

b. Location

_____
(City or town, if applicable) (Zip Code)

_____
(County) (State)

_____
(Latitude) (Longitude)

c. Distance from shore (if applicable) _____ft.

d. Depth below surface (if applicable) _____ft.

e. Which of the following were monitored during the last year for this CSO?

____Rainfall ____CSO pollutant concentrations ____CSO frequency

____CSO flow volume ____Receiving water quality

f. How many storm events were monitored during the last year? _____

G.4. CSO Events.

a. Give the number of CSO events in the last year.

_____ events (___ actual or ___ approx.)

b. Give the average duration per CSO event.

_____ hours (____ actual or ____ approx.)

c. Give the average volume per CSO event.

_____ million gallons (_____ actual or _____ approx.)

d. Give the minimum rainfall that caused a CSO event in the last year.

_____ inches of rainfall

G.5. Description of Receiving Waters.

a. Name of receiving water: _____

b. Name of watershed/river/stream system: _____

United States Soil Conservation Service 14-digit watershed code (if known): _____

c. Name of State Management/River Basin: _____

United States Geological Survey 8-digit hydrologic cataloging unit code (if known): _____

G.6. CSO Operations.

Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shell fish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable State water quality standard).

_____

_____

END OF PART G.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.

Additional information, if provided, will appear on the following pages.

FACILITY NAME: Town of Lawrenceville WWTP VPDES PERMIT NUMBER: VA0020354

VPDES SEWAGE SLUDGE PERMIT APPLICATION FORM

SCREENING INFORMATION

This application is divided into sections. Sections A pertain to all applicants. The applicability of Sections B, C and D depend on your facility's sewage sludge use or disposal practices. The information provided on this page will help you determine which sections to fill out.

1. All applicants must complete Section A (General Information).

2. Will this facility generate sewage sludge? X Yes __No

   Will this facility derive a material from sewage sludge? __Yes X No

   If you answered Yes to either, complete Section B (Generation Of Sewage Sludge Or Preparation Of A Material Derived From Sewage Sludge).

3. Will this facility apply sewage sludge to the land? __Yes X No

   Will sewage sludge from this facility be applied to the land? __Yes X No

   If you answered No to both questions above, skip Section C.

   If you answered Yes to either, answer the following three questions:

   a. Will the sewage sludge from this facility meet the ceiling concentrations, pollutant concentrations, Class A pathogen reduction requirements and one of the vector attraction reduction requirements 1-8, as identified in the instructions?
   __Yes __No

   b. Will sewage sludge from this facility be placed in a bag or other container for sale or give-away for application to the land? __Yes __No

   c. Will sewage sludge from this facility be sent to another facility for treatment or blending? __Yes __No

   If you answered No to all three, complete Section C (Land Application Of Bulk Sewage Sludge).

   If you answered Yes to a, b or c, skip Section C.

4. Do you own or operate a surface disposal site? __Yes X No

   If Yes, complete Section D (Surface Disposal).

FACILITY NAME: Town of Lawrenceville WWTP **VPDES PERMIT NUMBER:** VA0020354

SECTION A. GENERAL INFORMATION

All applicants must complete this section.

1. Facility Information.
   a. Facility name: Town of Lawrenceville WWTP
   b. Contact person: C. J. Dean
      Title: Town Manager
      Phone: (434) 848-2414
   c. Mailing address:
      Street or P.O. Box: 400 North Main Street
      City or Town: Lawrenceville State: VA Zip: 23868
   d. Facility location:
      Street or Route #: 380 Meadow Lane
      County: Brunswick Co.
      ~~City~~ or Town: Lawrenceville State: VA Zip: 23868
   e. Is this facility a Class I sludge management facility? ___Yes X No
   f. Facility design flow rate: 1.2 mgd
   g. Total population served: 4800
   h. Indicate the type of facility:
      X Publicly owned treatment works (POTW)
      ___ Privately owned treatment works
      ___ Federally owned treatment works
      ___ Blending or treatment operation
      ___ Surface disposal site
      ___ Other (describe): _____

2. Applicant Information. If the applicant is different from the above, provide the following:
   a. Applicant name: _____
   b. Mailing address:
      Street or P.O. Box: _____
      City or Town: _____ State: _____ Zip: _____
   c. Contact person: _____
      Title: _____
      Phone: ( ) _____
   d. Is the applicant the owner or operator (or both) of this facility?
      _____owner _____ operator
   e. Should correspondence regarding this permit be directed to the facility or the applicant? (Check one)
      _____ facility _____ applicant

3. Permit Information.
   a. Facility's VPDES permit number (if applicable): VA 0020354
   b. List on this form or an attachment, all other federal, state or local permits or construction approvals received or applied for that regulate this facility's sewage sludge management practices:

Permit Number:	Type of Permit:
_____	_____
_____	_____

4. Indian Country. Does any generation, treatment, storage, application to land or disposal of sewage sludge from this facility occur in Indian Country? ___Yes X No If yes, describe:
   _____

FACILITY NAME: Town of Lawrenceville WWTP VPDES PERMIT NUMBER: VA0020354

5. Topographic Map. Provide a topographic map or maps (or other appropriate maps if a topographic map is unavailable) that shows the following information. Maps should include the area one mile beyond all property boundaries of the facility: ATTACHMENT E
   a. Location of all sewage sludge management facilities, including locations where sewage sludge is generated, stored, treated, or disposed.
   b. Location of all wells, springs, and other surface water bodies listed in public records or otherwise known to the applicant within 1/4 mile of the property boundaries.

6. Line Drawing. Provide a line drawing and/or a narrative description that identifies all sewage sludge processes that will be employed during the term of the permit including all processes used for collecting, dewatering, storing, or treating sewage sludge, the destination(s) of all liquids and solids leaving each unit, and all methods used for pathogen reduction and vector attraction reduction. ATTACHMENT F

7. Contractor Information. Are any operational or maintenance aspects of this facility related to sewage sludge generation, treatment, use or disposal the responsibility of a contractor? __Yes X No
   If yes, provide the following for each contractor (attach additional pages if necessary).
   Name: _____
   Mailing address:
   Street or P.O. Box: _____
   City or Town: _____ State: _____ Zip: _____
   Phone: ( ) _____
   Contractor's Federal, State or Local Permit Number(s) applicable to this facility's sewage sludge:
   _____
   If the contractor is responsible for the use and/or disposal of the sewage sludge, provide a description of the service to be provided to the applicant and the respective obligations of the applicant and the contractor(s).

8. Pollutant Concentrations. Using the table below or a separate attachment, provide sewage sludge monitoring data for the pollutants which limits in sewage sludge have been established in 9 VAC 25-31-10 et seq. for this facility's expected use or disposal practices. All data must be based on three or more samples taken at least one month apart and must be no more than four and one-half years old.

POLLUTANT	CONCENTRATION (mg/kg dry weight)	SAMPLE DATE	ANALYTICAL METHOD	DETECTION LEVEL FOR ANALYSIS
Arsenic				
Cadmium				
Chromium				
Copper				
Lead				
Mercury				
Molybdenum				
Nickel				
Selenium				
Zinc				

9. Certification. Read and submit the following certification statement with this application. Refer to the instructions to determine who is an officer for purposes of this certification. Indicate which parts of the application you have completed and are submitting:

   X Section A (General Information)
   X Section B (Generation of Sewage Sludge or Preparation of a Material Derived from Sewage Sludge)
   ____Section C (Land Application of Bulk Sewage Sludge)
   ____Section D (Surface Disposal)

FACILITY NAME: Town of Lawrenceville WWTP **VPDES PERMIT NUMBER:** VA0020354

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and official title C. J. Dean, Town Manager

Signature C J Dean Date Signed 3/6/12

Telephone number 434-848-2414

Upon request of the department, you must submit any other information necessary to assess sewage sludge use or disposal practices at your facility or identify appropriate permitting requirements.

FACILITY NAME: Town of Lawrenceville WWTP VPDES PERMIT NUMBER: VA0020354

SECTION B. GENERATION OF SEWAGE SLUDGE OR PREPARATION OF A MATERIAL DERIVED FROM SEWAGE SLUDGE

Complete this section if your facility generates sewage sludge or derives a material from sewage sludge

1. Amount Generated On Site.
   Total dry metric tons per 365-day period generated at your facility: 71.18 dry metric tons

2. Amount Received from Off Site. If your facility receives sewage sludge from another facility for treatment, use or disposal, provide the following information for each facility from which sewage sludge is received. If you receive sewage sludge from more than one facility, attach additional pages as necessary.
   a. Facility name: N/A
   b. Contact Person: _____
      Title: _____
      Phone ( ) _____
   c. Mailing address:
      Street or P.O. Box: _____
      City or Town: _____ State: _____ Zip: _____
   d. Facility Address: _____
      (not P.O. Box) _____
   e. Total dry metric tons per 365-day period received from this facility: _____ dry metric tons
   f. Describe, on this form or on another sheet of paper, any treatment processes known to occur at the off-site facility, including blending activities and treatment to reduce pathogens or vector attraction characteristics:
      _____
      _____

3. Treatment Provided at Your Facility.
   a. Which class of pathogen reduction is achieved for the sewage sludge at your facility?
      ___Class A ___Class B ___Neither or unknown
   b. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce pathogens in sewage sludge: _____
      _____
   c. Which vector attraction reduction option is met for the sewage sludge at your facility?
      ___ Option 1 (Minimum 38 percent reduction in volatile solids)
      ___ Option 2 (Anaerobic process, with bench-scale demonstration)
      ___ Option 3 (Aerobic process, with bench-scale demonstration)
      ___ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
      ___ Option 5 (Aerobic processes plus raised temperature)
      ___ Option 6 (Raise pH to 12 and retain at 11.5)
      ___ Option 7 (75 percent solids with no unstabilized solids)
      ___ Option 8 (90 percent solids with unstabilized solids)
      ___ None or unknown
   d. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce vector attraction properties of sewage sludge: _____
      _____
   e. Describe, on this form or another sheet of paper, any other sewage sludge treatment activities, including blending, not identified in a - d above: _____
      _____

4. Preparation of Sewage Sludge Meeting Ceiling and Pollutant Concentrations, Class A Pathogen Requirements and One of Vector Attraction Reduction Options 1-8 (EQ Sludge).
   (If sewage sludge from your facility does not meet all of these criteria, skip Question 4.)
   a. Total dry metric tons per 365-day period of sewage sludge subject to this section that is applied to the land: _____ dry metric tons
   b. Is sewage sludge subject to this section placed in bags or other containers for sale or give-away?

__Yes __No

5. Sale or Give-Away in a Bag or Other Container for Application to the Land.

(Complete this question if you place sewage sludge in a bag or other container for sale or give-away prior to land application. Skip this question if sewage sludge is covered in Question 4.)

a. Total dry metric tons per 365-day period of sewage sludge placed in a bag or other container at your facility for sale or give-away for application to the land:_____ dry metric tons

b. Attach, with this application, a copy of all labels or notices that accompany the sewage sludge being sold or given away in a bag or other container for application to the land.

6. Shipment Off Site for Treatment or Blending.

(Complete this question if sewage sludge from your facility is sent to another facility that provides treatment or blending. This question does not apply to sewage sludge sent directly to a land application or surface disposal site. Skip this question if the sewage sludge is covered in Questions 4 or 5. If you send sewage sludge to more than one facility, attach additional sheets as necessary.)

a. Receiving facility name:_____

b. Facility contact: _____
Title: _____
Phone: ( )_____

c. Mailing address:
Street or P.O. Box:_____
City or Town:_____ State:_____ Zip:_____

d. Total dry metric tons per 365-day period of sewage sludge provided to receiving facility: _____ dry metric tons

e. List, on this form or an attachment, the receiving facility's VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the receiving facility's sewage sludge use or disposal practices:

Permit Number:	Type of Permit:
_____	_____
_____	_____

f. Does the receiving facility provide additional treatment to reduce pathogens in sewage sludge from your facility? __Yes __No
Which class of pathogen reduction is achieved for the sewage sludge at the receiving facility?
__Class A __Class B __Neither or unknown
Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce pathogens in sewage sludge:_____
_____

g. Does the receiving facility provide additional treatment to reduce vector attraction characteristics of the sewage sludge? __Yes __No
Which vector attraction reduction option is met for the sewage sludge at the receiving facility?
__ Option 1 (Minimum 38 percent reduction in volatile solids)
__ Option 2 (Anaerobic process, with bench-scale demonstration)
__ Option 3 (Aerobic process, with bench-scale demonstration)
__ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
__ Option 5 (Aerobic processes plus raised temperature)
__ Option 6 (Raise pH to 12 and retain at 11.5)
__ Option 7 (75 percent solids with no unstabilized solids)
__ Option 8 (90 percent solids with unstabilized solids)
__ None unknown
Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce vector attraction properties of sewage sludge:_____
_____

h. Does the receiving facility provide any additional treatment or blending not identified in f or g above?
__Yes __No
If yes, describe, on this form or another sheet of paper, the treatment processes not identified in f or g above:
_____
_____

i. If you answered yes to f., g or h above, attach a copy of any information you provide to the receiving facility

to comply with the "notice and necessary information" requirement of 9 VAC 25-31-530.G.

j Does the receiving facility place sewage sludge from your facility in a bag or other container for sale or give-away for application to the land? ___Yes ___No
If yes, provide a copy of all labels or notices that accompany the product being sold or given away.

k. Will the sewage sludge be transported to the receiving facility in a truck-mounted watertight tank normally used for such purposes? ___ Yes ___ No. If no, provide description and specification on the vehicle used to transport the sewage sludge to the receiving facility.
Show the haul route(s) on a location map or briefly describe the haul route below and indicate the days of the week and the times of the day sewage sludge will be transported. _____
_____
_____

7. Land Application of Bulk Sewage Sludge.
(Complete Question 7.a if sewage sludge from your facility is applied to the land, unless the sewage sludge is covered in Questions 4, 5 or 6; complete Question 7.b, c & d only if you are responsible for land application of sewage sludge.)

a. Total dry metric tons per 365-day period of sewage sludge applied to all land application sites:_____dry metric tons

b. Do you identify all land application sites in Section C of this application? ___Yes ___No
If no, submit a copy of the Land Application Plan (LAP) with this application (LAP should be prepared in accordance with the instructions).

c. Are any land application sites located in States other than Virginia? ___Yes ___No
If yes, describe, on this form or on another sheet of paper, how you notify the permitting authority for the States where the land application sites are located. Provide a copy of the notification.
_____
_____

d. Attach a copy of any information you provide to the owner or lease holder of the land application sites to comply with the "notice and necessary" information requirement of 9 VAC 25-31-530 F and/or H (Examples may be obtained in Appendix IV).

8. Surface Disposal.
(Complete Question 8 if sewage sludge from your facility is placed on a surface disposal site.)

a. Total dry metric tons per 365-day period of sewage sludge from your facility placed on all surface disposal sites: _____ dry metric tons

b. Do you own or operate all surface disposal sites to which you send sewage sludge for disposal?
___Yes ___No
If no, answer questions c - g for each surface disposal site that you do not own or operate. If you send sewage sludge to more than one surface disposal site, attach additional pages as necessary.

c. Site name or number: _____

d. Contact person: _____
Title: _____
Phone: ( )_____
Contact is: ___Site Owner ___Site operator

e. Mailing address.
Street or P.O. Box:_____
City or Town:_____ State:_____ Zip:_____

f. Total dry metric tons per 365-day period of sewage sludge from your facility placed on this surface disposal site: _____ dry metric tons

g. List, on this form or an attachment, the surface disposal site VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the sewage sludge use or disposal practices at the surface disposal site:

Permit Number:	Type of Permit:
_____	_____
_____	_____

9. Incineration.
(Complete Question 9 if sewage sludge from your facility is fired in a sewage sludge incinerator.)

a. Total dry metric tons per 365-day period of sewage sludge from your facility fired in a sewage sludge incinerator: _____ dry metric tons

b. Do you own or operate all sewage sludge incinerators in which sewage sludge from your facility is fired? ___Yes ___No
If no, answer questions c - g for each sewage sludge incinerator that you do not own or operate. If you send sewage sludge to more than one sewage sludge incinerator, attach additional pages as necessary.

c. Incinerator name or number: _____

d. Contact person: _____
Title: _____
Phone: ( ) _____
Contact is: ___Incinerator Owner ___Incinerator Operator

e. Mailing address.
Street or P.O. Box: _____
City or Town: _____ State: _____ Zip: _____

f. Total dry metric tons per 365-day period of sewage sludge from your facility fired in this sewage sludge incinerator: _____ dry metric tons

g. List on this form or an attachment the numbers of all other federal, state or local permits that regulate the firing of sewage sludge at this incinerator:

Permit Number:	Type of Permit:
_____	_____
_____	_____

10. Disposal in a Municipal Solid Waste Landfill.

(Complete Question 10 if sewage sludge from your facility is placed on a municipal solid waste landfill. Provide the following information for each municipal solid waste landfill on which sewage sludge from your facility is placed. If sewage sludge is placed on more than one municipal solid waste landfill, attach additional pages as necessary.)

a. Landfill name: Brunswick Waste Management Facility

b. Contact person: Eric Spencer
Title: Division Manager, Republic Services
Phone: (434 848-9715
Contact is: X Landfill Owner X Landfill Operator

c. Mailing address.
Street or P.O. Box: 107 Mallard Crossing Road
City or Town: Lawrenceville State: VA Zip: 23868

d. Landfill location.
Street or Route #: 107 Mallard Crossing Road
County: Brunswick Co
City or Town: Lawrenceville State: VA Zip: 23868

e. Total dry metric tons per 365-day period of sewage sludge placed in this municipal solid waste landfill: 71.18 dry metric tons

f. List, on this form or an attachment, the numbers of all federal, state or local permits that regulate the operation of this municipal solid waste landfill:

Permit Number:	Type of Permit:
583	Solid Waste Management Facility
_____	_____

g. Does sewage sludge meet applicable requirements in the Virginia Solid Waste Management Regulation, 9 VAC 20-80-10 et seq., concerning the quality of materials disposed in a municipal solid waste landfill? X Yes ___No

h. Does the municipal solid waste landfill comply with all applicable criteria set forth in the Virginia Solid Waste Management Regulation, 9 VAC 20-80-10 et seq.? X Yes ___No

i. Will the vehicle bed or other container used to transport sewage sludge to the municipal solid waste landfill be watertight and covered? X Yes ___ No
Show the haul route(s) on a location map or briefly describe the route below and indicate the days of the week and time of the day sewage sludge will be transported. Attached map; Haul times Monday - Friday @ 8AM. - 2pm. ATTACHMENT G

FACILITY NAME: Lawrenceville WWTP VPDES PERMIT NUMBER: VA0020354

SECTION C. LAND APPLICATION OF BULK SEWAGE SLUDGE

Complete this section for sewage sludge that is land applied unless any of the following conditions apply:

The sewage sludge meets the Table 1 ceiling concentrations, the Table 3 pollutant concentrations, Class A pathogen requirements and one of the vector attraction reduction options 1-8 (fill out B.4 instead) (EQ Sludge); or

The sewage sludge is sold or given away in a bag or other container for application to the land (fill out B.5 instead); or

You provide the sewage sludge to another facility for treatment or blending (fill out B.6 instead).

Complete Section C for every site on which the sewage sludge that you reported in B.7 is land applied.

1. Identification of Land Application Site.
   a. Site name or number: _____
   b. Site location (Complete i and ii)
      i. Street or Route#: _____
      County: _____
      City or Town: _____ State: _____ Zip: _____
      ii. Latitude:_____ Longitude:_____
      Method of latitude/longitude determination
      _____ USGS map _____ Filed survey _____ Other
   c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.

2. Owner Information.
   a. Are you the owner of this land application site? ___Yes ___No
   b. If no, provide the following information about the owner:
      Name: _____
      Street or P.O. Box:_____
      City or Town: _____ State:_____ Zip:_____
      Phone: ( )_____

3. Applier Information:
   a. Are you the person who applies, or who is responsible for application of, sewage sludge to this land application site? ___Yes ___No
   b. If no, provide the following information for the person who applies the sewage sludge:
      Name: _____
      Street or P.O. Box:_____
      City or Town:_____ State:_____ Zip:_____
      Phone: ( )_____
   c. List, on this form or an attachment, the numbers of all federal, state or local permits that regulate the person who applies sewage sludge to this land application site:

Permit Number:	Type of Permit:
_____	_____
_____	_____

4. Site Type. Identify the type of land application site from among the following:
   ___Agricultural land ___Reclamation site ___Forest
   ___Public contact site ___Other. Describe _____

5. Vector Attraction Reduction.
   Are any vector attraction reduction requirements met when sewage sludge is applied to the land application site?
   ____Yes ____No If yes, answer a and b.
   a. Indicate which vector attraction reduction option is met:
      ___ Option 9 (Injection below land surface)
      ___ Option 10 (Incorporation into soil within 6 hours)
   b. Describe, on this form or on another sheet of paper, any treatment processes used at the land application site to reduce the vector attraction properties of sewage sludge:
      _____
      _____

FACILITY NAME: Lawrenceville W W TP **VPDES PERMIT NUMBER:** VA0020354

6. Cumulative Loadings and Remaining Allotments.

(Complete Question 6 only if the sewage sludge applied to this site since July 20, 1993 is subject to the cumulative pollutant loading rates (CPLRs) - see instructions.)

a. Have you contacted DEQ or the permitting authority in the state where the sewage sludge subject to the CPLRs will be applied to ascertain whether bulk sewage sludge subject to the CPLRs has been applied to this site since July 20, 1993? ___Yes ___No
If no, sewage sludge subject to the CPLRs may not be applied to this site.
If yes, provide the following information:
Permitting authority: _____
Contact person:_____
Phone:( )_____

b. Based upon this inquiry, has bulk sewage sludge subject to the CPLRs been applied to this site since July 20, 1993? ___Yes ___No If no, skip the rest of Question 6. If yes, answer questions c - e.

c. Site size, in hectares: _____ (one hectare = 2.471 acres)

d. Provide the following information for every facility other than yours that is sending or has sent sewage sludge subject to the CPLRs to this site since July 20, 1993. If more than one such facility sends sewage sludge to this site, attach additional pages as necessary.
Facility name:_____
Facility contact: _____
Title: _____
Phone: ( )_____
Mailing address.
Street or P.O. Box:_____
City or Town:_____ State:_____ Zip:_____

e. Provide the total loading and allotment remaining, in kg/hectare, for each of the following pollutants:

	Cumulative loading	Allotment remaining
Arsenic	_____	_____
Cadmium	_____	_____
Copper	_____	_____
Lead	_____	_____
Mercury	_____	_____
Nickel	_____	_____
Selenium	_____	_____
Zinc	_____	_____

Complete Questions 7-12 below only if you apply sewage sludge, or you are responsible for land application of sewage sludge. Information required by these questions may be prepared as attachments to this form. Skip the following questions if you contract land application to someone else (as indicated under Section A.7) who is responsible for the operation.

7. Sludge Characterization. Use the table below or a separate attachment, provide at least one analysis for each parameter.

PCBs (mg/kg)	_____
pH (S. U.)	_____
Percent Solids (%)	_____
Ammonium Nitrogen (mg/kg)	_____
Nitrate Nitrogen (mg/kg)	_____
Total Kjeldahl Nitrogen (mg/kg)	_____
Total Phosphorus (mg/kg)	_____
Total Potassium (mg/kg)	_____
Alkalinity as $CaCO_3$* (mg/kg)	_____

* Lime treated sludge (10% or more lime by dry weight) should be analyzed for percent $CaCO_3$.

8. Storage Requirements.

Existing and proposed sludge storage facilities must provide an estimated annual sludge balance on a monthly basis incorporating such factors as storage capacity, sludge production and land application schedule. Include pertinent calculations justifying storage requirements.

Proposed sludge storage facilities must also provide the following information:

a. A sludge storage site layout on a 7.5 minute topographic quadrangle or other appropriate scaled map to show the following topographic features of the surrounding landscape to a distance of 0.25 mile. Clearly mark the property line.
   1) Water wells, abandoned or operating
   2) Surface waters
   3) Springs
   4) Public water supply(s)
   5) Sinkholes
   6) Underground and/or surface mines
   7) Mine pool (or other) surface water discharge points
   8) Mining spoil piles and mine dumps
   9) Quarry(s)
   10) Sand and gravel pits
   11) Gas and oil wells
   l2) Diversion ditch(s)
   13) Agricultural drainage ditch(s)
   14) Occupied dwellings, including industrial and commercial establishments
   15) Landfills or dumps
   16) Other unlined impoundments
   17) Septic tanks and drainfields
   18) Injection wells
   19) Rock outcrops

b. A topographic map of sufficient detail to clearly show the following information:
   1) Maximum and minimum percent slopes
   2) Depressions on the site that may collect water
   3) Drainageways that may attribute to rainfall run-on to or runoff from this site
   4) Portions of the site (if any) which are located with the 100-year floodplain and how the storage facility will be protected from flooding

c. Data and specifications for the storage facility lining material.

d. Plan and cross-sectional views of the storage facility.

e. Depth from the bottom of the storage facility to the seasonal high water table and separation distance to the permanent water table.

9. Land Area Requirements. Provide calculations justifying the land area requirements for land application of sewage sludge taking into consideration average soil productivity group, crop(s) to be grown and most limiting factor(s) of the sewage sludge, specifically Plant Available Nitrogen (PAN), Calcium Carbonate Equivalence (CCE), and metal loadings (CPLR sewage sludge only), where applicable. Relate PAN, CCE, and metal loadings to demonstrate the most limiting factor for land application.

10. Landowner Agreement Forms. Provide a properly completed Sewage Sludge Application Agreement Form (attached) for each landowner if sewage sludge is to be applied onto land not owned by the applicant.

11. Ground Water Monitoring.

Are any ground water monitoring data available for this land application site? __Yes __No

If yes, submit the ground water monitoring data with this permit application. Also submit a written description of the well locations, approximate depth to ground water, and the ground water monitoring procedures used to obtain these data.

12. Land Application Site Information.

(Complete Items a-d for sites receiving infrequent application - land application of sewage sludge up to the agronomic rate at a frequency of once in a 3 year period; complete Items a-h for sites receiving frequent application - land application of sewage sludge in excess of 70% the agronomic rate at a frequency greater than once in a 3 year period)

a. Provide a general location map for each county which clearly indicates the location of all the land application sites.

b. For each land application site provide a site plan of sufficient detail to clearly show the concerned landscape features and associated buffer zones (See instructions). Provide a legend for each landscape feature and the net acreage for each field taking into account the proposed buffer zones.

c. In order to ensure that land application of bulk sewage sludge will not impact federally listed threatened or endangered species or federally designated critical habitat, the applicant must notify the field office of the U. S. Department of the Interior, Fish and Wildlife Service (FWS), by a letter, the proposed land application activities with the identification of the land application sites. The address and phone number of FWS are provided below.

U. S. Fish and Wildlife Service
Ecological Services
6669 Short Lane
Gloucester, VA 23061
TEL: (804) 693-6694

Provide a copy of the notification letter with this application form.

d. Provide a soil survey map, preferably photographically based, with the field boundaries clearly marked. (A USDA-SCS soil survey map should be provided, if available.)
Provide a detailed legend for each soil survey map which uses accepted USDA-SCS descriptions of the typifying pedon for each soil series (soil type). Complex associations may be described as a range of characteristics. Soil descriptions shall include as a minimum the following information.

1) Soil symbol
2) Soil series, textural phase and slope range
3) Depth to seasonal high water table
4) Depth to bedrock
5) Estimated soil productivity group (for the proposed crop rotation)

Item e - h are required for sites receiving frequent application of sewage sludge

e. In order to verify the information provided in item d, characterize the soil at each land application site. Representative soil borings or test pits to a depth of five feet or to bedrock if shallower, are to be coordinated for the typifying pedon of each soil series (soil type). Soil descriptions shall include as a minimum the following information:

1). Soil symbol
2). Soil series, textural phase and slope range
3). Depth to seasonal high water table
4). Depth to bedrock
5). Estimated soil productivity group (for the proposed crop rotation)

f. Collect and analyze soil samples from each field, weighted to best represent each of the soil borings performed for Item e. Using the table below or a separate attachment, provide at least one analysis per sample for each of the following parameters.

Soil Organic Matter (%)	_____
Soil pH (std. units)	_____
Cation Exchange Capacity (meq/100g)	_____
Total Nitrogen (ppm)	_____
Organic Nitrogen (ppm)	_____
Ammonia Nitrogen (ppm)	_____
Nitrate Nitrogen (ppm)	_____
Available Phosphorus (ppm)	_____
Exchangeable Potassium (mg/100g)	_____
Exchangeable Sodium (mg/100g)	_____
Exchangeable Calcium (mg/100g)	_____
Exchangeable Magnesium (mg/100g)	_____
Arsenic (ppm)	_____
Cadmium (ppm)	_____
Copper (ppm)	_____
Lead (ppm)	_____
Mercury (ppm)	_____
Molybdenum (ppm)	_____
Nickel (ppm)	_____
Selenium (ppm)	_____
Zinc (ppm)	_____
Manganese (ppm)	_____
Particle Size Analysis or USDA Textural Estimate (%)	_____

g. Relate the crop nutrient needs to anticipated yields, soil productivity rating and the various fertilizer or nutrient sources from sludge and chemical fertilizers. Describe any specialized agronomic management practices which may be required as a result of high soil pH. If the sludge is expected to possess an unusually high CCE or other unusual properties, provide a description of any plant tissue testing, supplemental fertilization or intensive agronomic management practices which may be necessary.

h. Using a narrative format and referencing any related charts, describe the proposed cropping system. Show how the crop rotation and management will be coordinated with the design of the land application system. Include any supplemental fertilization program, soil testing and the coordination of tillage practices, planting and harvesting schedules and timing of land application.

FACILITY NAME: Lawrenceville WWTP **VPDES PERMIT NUMBER:** VA0020354

SEWAGE SLUDGE APPLICATION AGREEMENT

This sewage sludge application agreement is made on this date _____ between _____, referred to here as "landowner", and _____, referred to here as the "Permittee".

Landowner is the owner of agricultural land shown on the map attached as Exhibit A and designated there as _____ ("landowner's land"). Permittee agrees to apply and landowner agrees to comply with certain permit requirements following application of sewage sludge on landowner's land in amounts and in a manner authorized by VPDES permit number _____ which is held by the Permittee.

Landowner acknowledges that the appropriate application of sewage sludge will be beneficial in providing fertilizer and soil conditioning to the property. Moreover, landowner acknowledges having been expressly advised that, in order to protect public health, the following site restrictions must be adhered to when sewage sludge receives Class B treatment for pathogen reduction:

1. Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge;

2. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for four months or longer prior to incorporation into the soil;

3. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil;

4. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge;

5. Animals shall not be grazed on the land for 30 days after application of sewage sludge;

6. Turf grown on land where sewage sludge is applied shall not be harvested for one year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the State Water Control Board;

7. Public access to land with a high potential for public exposure shall be restricted for one year after application of sewage sludge;

8. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.

9. Tobacco, because it has been shown to accumulate cadmium, should not be grown on landowner's land for three years following the application of sewage sludge borne cadmium equal to or exceeding 0.5 kilograms/hectare (0.45 pounds/acre).

Permittee agrees to notify landowner or landowner's designee of the proposed schedule for sewage sludge application and specifically prior to any particular application to landowner's land. This agreement may be terminated by either party upon written notice to the address specified below.

Landowner:	Permittee:
_____	_____
Signature	Signature
_____	_____
Mailing Address	Mailing Address

FACILITY NAME: Lawrenceville WWTP VPDES PERMIT NUMBER: VA 20354

SECTION D. SURFACE DISPOSAL

Complete this section only if you own or operate a surface disposal site. Provide the information for each active sewage sludge unit.

1. Information on Active Sewage Sludge Units.
   a. Unit name or number: _____
   b. Unit location
      i. Street or Route#: _____
      County: _____
      City or Town: _____ State: _____ Zip: _____
      ii. Latitude:_____ Longitude:_____
      Method of latitude/longitude determination
      _____ USGS map _____ Filed survey _____ Other
   c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.
   d. Total dry metric tons of sewage sludge placed on the active sewage sludge unit per 365-day period: _____dry metric tons.
   e. Total dry metric tons of sewage sludge placed on the active sewage sludge unit over the life of the unit: _____ dry metric tons.
   f. Does the active sewage sludge unit have a liner with a minimum hydraulic conductivity of 1×10^{-7} cm/sec? ___Yes ___No If yes, describe the liner or attach a description.
      _____
      _____
   g. Does the active sewage sludge unit have a leachate collection system? ___Yes ___No
      If yes, describe the leachate collection system or attach a description. Also, describe the method used for leachate disposal and provide the numbers of any federal, state or local permits for leachate disposal:
      _____
      _____
      _____
   h. If you answered no to either f or g, answer the following:
      Is the boundary of the active sewage sludge unit less than 150 meters from the property line of the surface disposal site? ___Yes ___No If yes, provide the actual distance in meters:_____
   i. Remaining capacity of active sewage sludge unit, in dry metric tons:_____ dry metric tons
      Anticipated closure date for active sewage sludge unit, if known:_____ (MM/DD/YYYY)
      Provide with this application a copy of any closure plan developed for this active sewage sludge unit.

2. Sewage Sludge from Other Facilities.
   Is sewage sludge sent to this active sewage sludge unit from any facilities other than yours? ___Yes ___No
   If yes, provide the following information for each such facility, attach additional sheets as necessary.
   a. Facility name:_____
   b. Facility contact: _____
      Title: _____
      Phone: ( )_____
   c. Mailing address.
      Street or P.O. Box:_____
      City or Town:_____ State:_____ Zip:_____
   d. List, on this form or an attachment, the facility's VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the facility's sewage sludge management practices:

Permit Number:	Type of Permit:
_____	_____
_____	_____

   e. Which class of pathogen reduction is achieved before sewage sludge leaves the other facility?
      ___Class A ___Class B ___Neither or unknown
   f. Describe, on this form or on another sheet of paper, any treatment processes used at the other facility to reduce pathogens in sewage sludge:_____
      _____
      _____

g. Which vector attraction reduction option is achieved before sewage sludge leaves the other facility?
___ Option 1 (Minimum 38 percent reduction in volatile solids)
___ Option 2 (Anaerobic process, with bench-scale demonstration)
___ Option 3 (Aerobic process, with bench-scale demonstration)
___ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
___ Option 5 (Aerobic processes plus raised temperature)
___ Option 6 (Raise pH to 12 and retain at 11.5)
___ Option 7 (75 percent solids with no unstabilized solids)
___ Option 8 (90 percent solids with unstabilized solids)
___ None or unknown

h. Describe, on this form or another sheet of paper, any treatment processes used at the other facility to reduce vector attraction properties of sewage sludge:_____
_____
_____

i. Describe, on this form or another sheet of paper, any other sewage sludge treatment activities performed by the other facility that are not identified in e - h above:_____
_____
_____

3. Vector Attraction Reduction.

a. Which vector attraction reduction option, if any, is met when sewage sludge is placed on this active sewage sludge unit?
___ Option 9 (Injection below land surface)
___ Option 10 (Incorporation into soil within 6 hours)
___ Option 11 (Covering active sewage sludge unit daily)

b. Describe, on this form or another sheet of paper, any treatment processes used at the active sewage sludge unit to reduce vector attraction properties of sewage sludge: _____
_____
_____

4. Ground Water Monitoring.

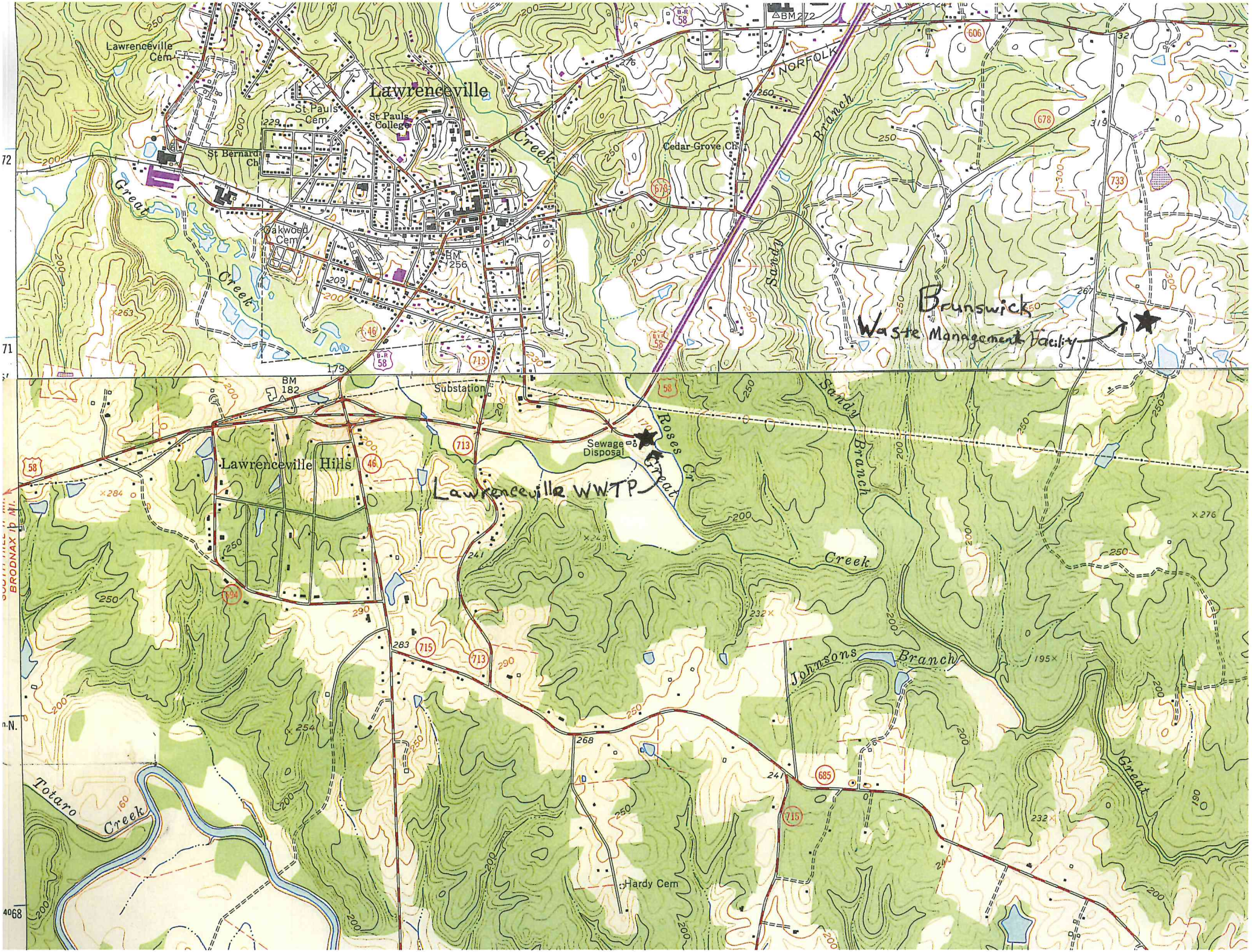
a. Is ground water monitoring currently conducted at this active sewage sludge unit or are ground water monitoring data otherwise available for this active sewage sludge unit? ___Yes ___No
If yes, provide a copy of available ground water monitoring data. Also provide a written description of the well locations, the approximate depth to ground water, and the ground water monitoring procedures used to obtain these data.

b. Has a ground water monitoring program been prepared for this active sewage sludge unit?
___Yes ___No If yes, submit a copy of the ground water monitoring program with this application.

c. Have you obtained a certification from a qualified ground water scientist that the aquifer below the active sewage sludge unit has not been contaminated? ___Yes ___No
If yes, submit a copy of the certification with this application.

5. Site-Specific Limits.
Are you seeking site-specific pollutant limits for the sewage sludge placed on the active sewage sludge unit?
___Yes ___No If yes, submit information to support the request for site-specific pollutant limits with this application.

ATTACHMENT A


Lawrenceville
Lawrenceville Cem
St Pauls Cem
St Pauls College
St Bernard Ch
Oakwood Cem
Great Creek
Cedar Grove Ch
Sandy Branch
NORFOLK
Brunswick Waste Management Facility
BM 182
Substation
Lawrenceville Hills
Lawrenceville WWTP
Sewage Disposal
Roses Cr
Great Creek
Sandy Branch
Johnsons Branch
Great Creek
Totaro Creek
Hardy Cem
BM 256
BM 272

Google earth

feet 300
meters 100

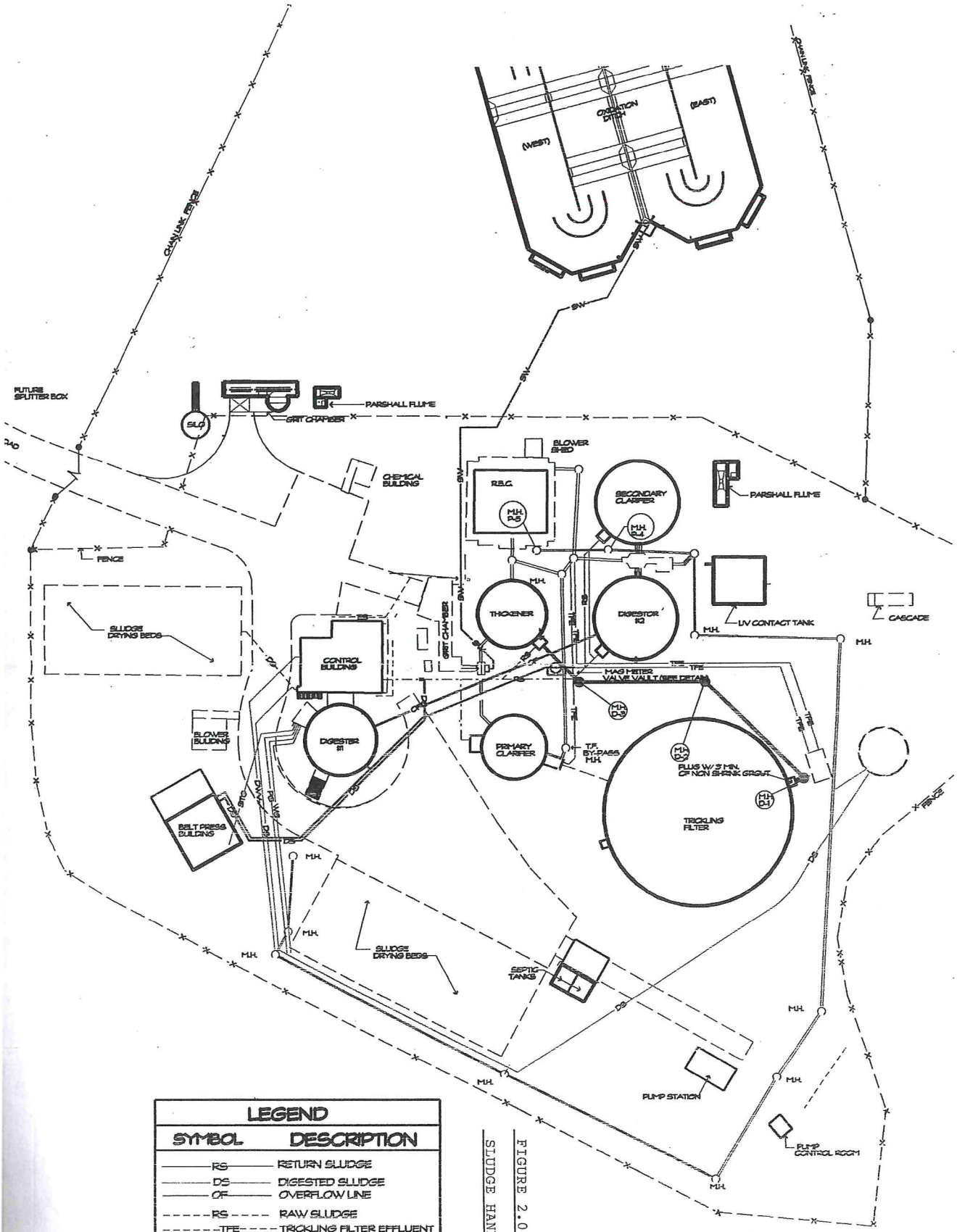


FIGURE 2.0 - 8

SLUDGE HANDLING SYSTEM LAYOUT

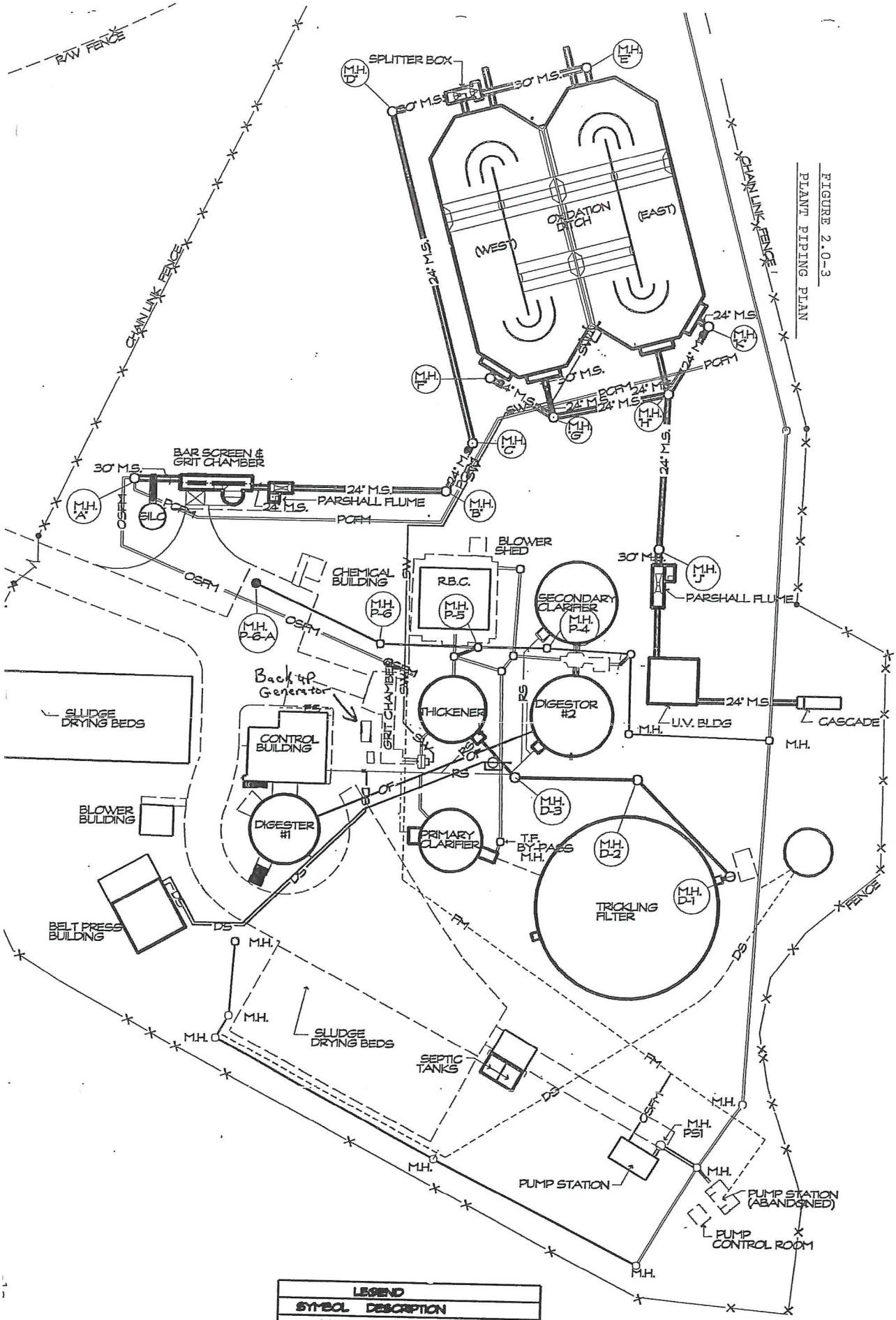
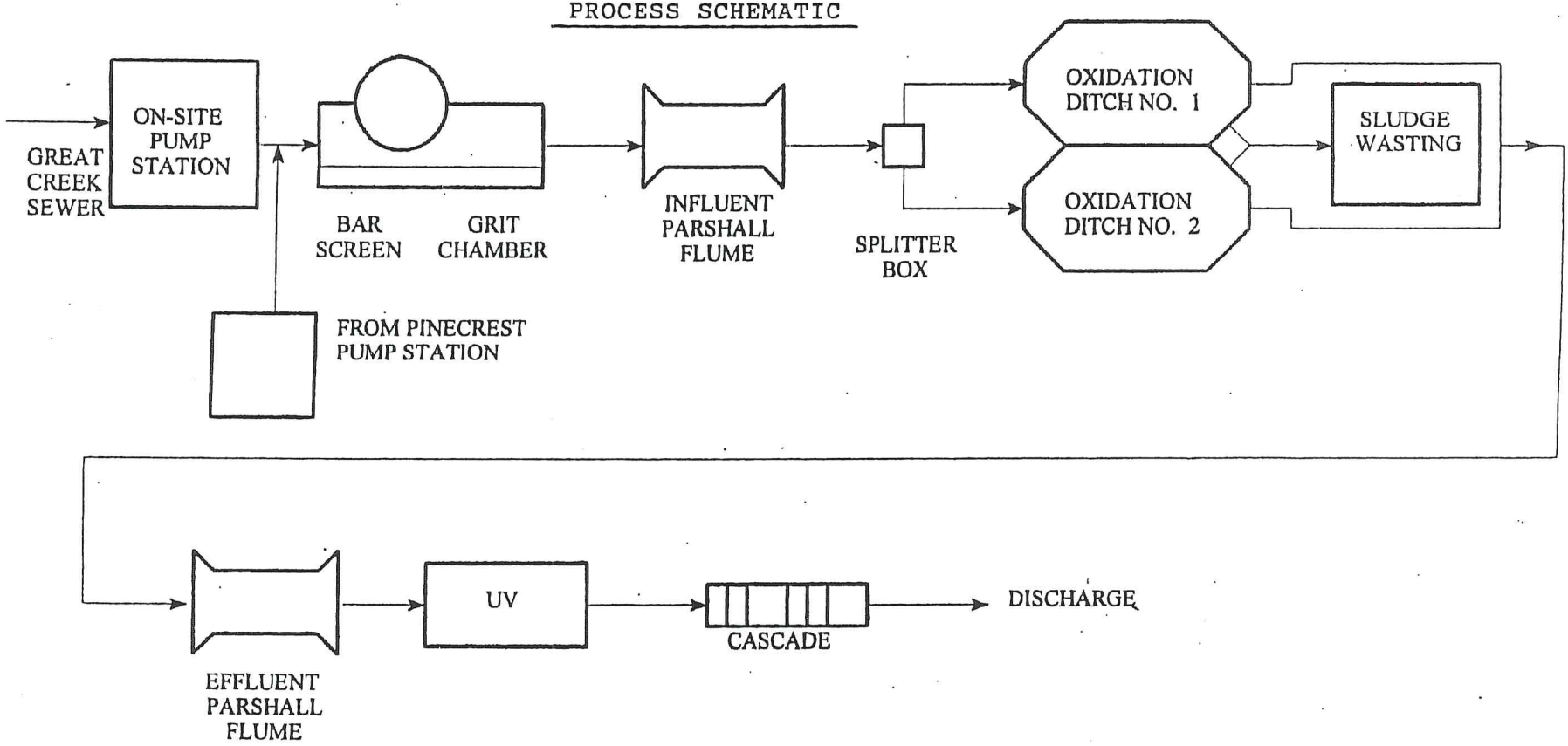


FIGURE 2.0-3

PLANT PIPING PLAN

LEGEND	
SYMBOL	DESCRIPTION
MS	MAIN SEWER
RS	RETURN SLUDGE
DS	DIGESTED SLUDGE
OSFM	ON-SITE FORCE MAIN
PCFM	PINE CREST FORCE MAIN
OF	OVERFLOW LINE

PROCESS SCHEMATIC



SECTION 2

PROCESS DESCRIPTION

2.0 Treatment Processes at the Lawrenceville Wastewater Treatment Plant

2.0.1 Sewage Collection System and Treatment Plant Processes

Wastewater collected in the sewer system is conveyed to the treatment plant through gravity lines, pump stations, and force mains. The basic plant treatment processes are shown in Figure 2.0-1 Process Schematic, and Figure 2.0-2, Plant Layout. Interconnections between the processes are shown in Figure 2.0-3, Plant Piping Plan. The various processes are discussed in general below, and in detail in following sections.

2.0.2 Preliminary Treatment System

The purpose of preliminary treatment is to remove large objects (such as cans, bottles, boards, stones, rags, glass, coarse grit, etc.) that can harm or interfere with downstream units.

Preliminary treatment includes an Aqua-Guard mechanical bar screen and a Smith and Loveless grit removal system. Explicit descriptions of the units are provided in Section 3, Detailed Operation and Controls. An influent flow meter follows the grit chamber.

Raw wastewater enters the Aqua-Guard mechanical bar screen,

which removes rags, boards, beer cans, and other large solid objects. If the mechanical bar screen is out of service, flow is rerouted through a manually-cleaned screen.

After bar screening, the wastewater enters the grit chamber. Grit is removed by a grit dewatering screw while allowing the wastewater to drain.

Following the grit chamber, the wastewater enters a Parshall Flume for flow rate measurement. Note that the flume allows visual monitoring of flow rate (by noting the depth of wastewater in the flume), while added electronics provide indicating, recording, and totalizing functions.

Flow from the Parshall Flume is piped to the head of the secondary treatment units. See Figure 2.0-4 for Preliminary Treatment Layout and see Figure 2.0-5 for Preliminary Treatment Section.

2.0.3 Secondary Treatment

Secondary treatment consists of two oxidation ditches employing the activated sludge process. See Figure 2.0-6 for Secondary Treatment Layout.

The activated sludge process is an aerobic, suspended growth,

biological treatment method. Metabolic reactions of activated sludge microorganisms produce high quality effluent by converting and/or removing oxygen demanding substances.

The activated sludge process is perhaps the most widely used means for reducing the concentrations of dissolved, particulate, and colloidal organic pollutants in wastewater. The basic design parameters for the process are fairly well known, and adequate conservative design standards based on empirical data have evolved over the years.

In the basic activated sludge process, wastewater enters an aerated basin (or aeration tank) where it contacts previously developed biological floc particles. The organic matter in the wastewater serves as both a carbon and an energy source for cell growth, and is converted into cell tissue and oxidized end products (chiefly carbon dioxide).

The contents of the aeration tank are called Mixed Liquor. This biological mass can be measured as mixed liquor suspended solids (MLSS) or mixed liquor volatile suspended solids (MLVSS). MLSS consists of microorganisms, cellular material, inert suspended matter, and non-biodegradable suspended matter.

The microorganisms are 70 to 90% organic and 10 to 30%

inorganic. Cell types vary with the chemical composition of the wastewater.

Following aeration, clarification (also called settling or sedimentation) separates the suspended solids (SS) in the mixed liquor from the treated wastewater. Much of the biological solids settling out during clarification are recycled back to the aeration step, thus maintaining a concentrated population of microorganisms for treating the wastewater.

However, excess biological solids resulting from the continuous growth of microorganisms must be wasted from the system. At Lawrenceville, these excess solids are pumped from the aeration basins.

The basic activated sludge process has several interrelated components, including the following:

1. Aeration to provide adequate oxygen and mixing. At Lawrenceville aeration is provided by mechanical brush aerators (rotors).

2. Multiple aeration tanks in which the biological reactions occur.

3. Means for removing (or wasting) excess biological solids (waste activated sludge, or WAS) from the system.

Activated sludge design and operation are generally based on

the mean solids retention time (MSRT) or the food to microorganism ration (F:M) The MSRT is the average length of time microorganisms are maintained in the system. F:M is the ratio of the mass of food (often measured as Biochemical Oxygen Demand, or BOD) to the mass of bacteria in the aeration tank. In addition, the hydraulic detention time is an important factor for designing and activated sludge system.

The types of microorganisms predominating in an activated sludge system depends on the characteristics of the influent wastewater, environmental conditions, process design factors, and the mode of plant operation. Successful operation depends on cultivating a biological community (or biomass) that will oxidize and assimilate wastewater organic. The biomass must flocculate well, and must settle properly during clarification to produce a concentrated sludge and a clear effluent.

The overall biochemical reactions are determined by the net metabolism of all the microorganisms in an activated sludge biomass. The metabolic processes during cell growth consist of two separate, yet simultaneous, overall reactions: synthesis and respiration. Synthesis involves incorporating part of the organic matter (or food) into new cells during growth. Respiration is the coupled release of energy by converting food material to lower energy-containing compounds, generally CO_2,H_2O, and possibly

oxidized forms of nitrogen. The types of metabolic end products depend on a number of factors, including reaction time, temperature, and process loading.

In addition carbonaceous BOD (cBOD), wastewater contains ammonia. Ammonia must often be removed from wastewater because it can be toxic to aquatic species and because it also an oxygen demand (or NBOD). Activated sludge process can be designed to oxidize ammonia during a process called nitrification. This is the case at the Lawrenceville Wastewater Treatment Plant.

BOD is expressed in terms of the time over which the oxygen demand is measured: 5 days is the most common, while 20 day time periods are also used. To measure cBOD alone, nitrification can be inhibited chemically when a cBOD test is set up.

For typical municipal wastewater, a well-designed activated sludge process can achieve a soluble $cBOD_5$ effluent of 5 mg/L or less. Some BOD_5 is not soluble, however, such that on a practical basis, an effluent $cBOD_5$ of 20 mg/L and suspended solids of 20 mg/L can be attained with proper operation. Potential capabilities of the process are 10 mg/L BOD_5 and 15 mg/L suspended solids, and possibly lower. To consistently achieve values lower than 10 and 15 mg/L, some type of tertiary treatment (such as filtration) is usually required.

2.0.5 Disinfection and Effects of Oxygen Demand on Receiving Streams

Disinfection

Pathogens (disease-causing microorganisms) in wastewater can threaten drinking water supplies, water-contact recreational waters, and shellfish growing areas. Thus, wastewater effluent is often disinfected to reduce these risks.

The pathogens of greatest concern in wastewater are enteric (intestinal) bacteria, viruses, and parasites. Bacterial diseases include salmonellosis (including typhoid and paratyphoid fevers), cholera, gastroenteritis from enteropathogenic *Escherichia coli*, and shigellosis (bacillary dysentery). Viral diseases include infectious hepatitis, polio, and diseases caused by Coxsackie viruses A and B, echo-viruses, reo-viruses, and adeno-viruses. Giardiasis and amebic dysentery are examples of parasitic diseases.

Secondary treatment can remove up to 99% of waterborne microorganisms from raw sewage. Tertiary treatment can further reduce pathogen levels. Nevertheless, regulatory agencies usually require disinfection to maximize pathogen inactivation.

Generally, pathogen inactivation levels depend on exposure time and the potency of a disinfectant. The kinetics of die-off are influenced by mixing conditions, cell resistance, complexity, oxidation, clumping, and short circuiting within a disinfection

tank.

The expanded Lawrenceville Wastewater Treatment Plant will disinfect with ultraviolet (UV) light. The disinfection system consists of a contact tank and UV lights. The contact tank provides a region in which UV light can pass through the wastewater to inactivate pathogens.

The UV tank was designed to provide a minimum detention time of 30 minutes at average design flow, which is considered adequate for disinfection. See Figure 2.0-7 for UV Contact Tank Layout.

Effects of Oxygen Demand on Receiving Streams and Post-Aeration

Degradable organic matter uses dissolved oxygen (D.O.) in receiving waters when it exerts BOD. Stream dissolved oxygen is replenished chiefly by atmospheric reaeration, photosynthesis, and can be increased by tributary streams. The minimum dissolved oxygen concentration needed by fish is 4 to 5.0 mg/liter. Thus it is important to remove most of the BOD from wastewater before it enters a stream.

Post-aeration is used to ensure there is sufficient dissolved oxygen in treated wastewater. At Lawrenceville, post-aeration is provided by a cascade-step system which increases transfer of oxygen from the atmosphere into the wastewater.

2.0.6 Sludge Handling system

The sludge handling system includes waste activated sludge (WAS) pumps, which are an integral part of the secondary treatment system). See Figure 2.0-8 -Sludge Handling System Layout for location of equipment.

The sludge wasting pumps convey the sludge to the thickener. Following thickening the sludge is routed to Digester No. 1 and then to Digester No. 2.

Sludge aeration in the aerobic digester helps support biological growth, removing nutrients and stabilizing the sludge. Mixing and oxygen requirements are met by surface aerators. Supernatant is decanted from the top tanks through telescopic valve arrangements and is returned to the head of the plant through the plant drain system for further processing.

Stabilized digested sludge is pumped to the dewatering building. Dewatered sludge is trucked to the Brunswick County Solid Waste Management facility, where it is land filled.

2.1 Raw Sewage Characteristics

Sewage flow-rates vary over a wide range depending on such things as time of day, infiltration and inflow, seasonal variations, etc. Influent flow rates at the plant can be expected

to vary according to the activity of contributors to the system. Maximum activity usually occurs during morning, mid-day and early evening. Conversely, during late evening or early morning hours, flow rate can be expected to be at a minimum.

Sewage entering the system generally is about 99.9% water. The remaining 0.1% consists of both dissolved and suspended solids that give sewage its undesirable characteristics. These solids must be removed by treatment. The solids are discussed below in terms of their physical, chemical and biological characteristics.

2.1.1 Physical Characteristics

The important physical characteristics of sewage are temperature, odor, turbidity (clarity) and color. Wastewater temperature is important because of its effect on sedimentation and biological activity. Generally, as temperature increases, water viscosity decreases, improving and sedimentation. Also, biological activity increases with temperature from 45 degrees F to 105 degrees F. Normally, the temperature of sewage will be a few degrees higher than the water supply and will not vary significantly throughout the year.

The odor of fresh domestic wastewater is musty, but not particularly offensive. Stale wastewater, on the other hand, has a very obnoxious odor. This odor occurs when sewage goes septic

(no oxygen) and is usually the result of anaerobic bacteria in the wastewater feeding on organic material, producing hydrogen sulfide gas. This gas is toxic (and can be deadly) and very corrosive, and can damage equipment, paint, and concrete sewer lines. Methane gas, another by-product of anaerobic decomposition of organic matter, can form mixtures with air that are potentially explosive.

Raw sewage is normally highly turbid or cloudy due to its high solids content. As sewage flows through sewer lines, large solid material breaks up into finely divided particles causing this turbidity. During storms, if runoff from streets enters sanitary sewer lines, suspended soil particles and grit will cause a dramatic increase in raw sewage turbidity.

Raw domestic wastewater contains varying amounts of undissolved solid material, including trash and debris such as rags, stringy materials, paper, wood chips, sand, gravel, etc. Solids are usually classed as settled or suspended. Settled solids settle out of suspension quickly when the sewage enters a quiescent basin. Suspended solids can remain in suspension for a significant time.

2.1.2 Chemical Characteristics

Raw sewage characteristics depend on the quantity of inorganic and organic matter suspended or dissolved in the wastewater. Dissolved inorganic matter is usually similar to that found in the domestic water supply. For example, if the water supply is high in hardness ions such as calcium, magnesium and iron, the raw sewage will likely contain large amounts of these materials. Hard sewage waters may be troublesome since it forms scaly encrustations on metal surfaces blocking piping and hindering valve movement. However, calcium hardness can reduce effluent dissolved metal toxicity, if metals such as copper or zinc are present.

Sulfur compounds in sewage are important because bacteria can convert them to hydrogen sulfide gas, which can be deadly at high concentrations. Also, suspended grit, such as sand and soil particles are abrasive, and can decrease the service life of pumps and other process equipment. If these materials reach plant treatment units they will often accumulate until the units are taken out of service for cleaning.

Organic matter found wastewater is derived from human wastes, oil, greases, and ground garbage flushed. Organic serve as food for different types of bacteria, including those which grow and reproduce in the presence of oxygen. The quantity of oxygen required for aerobic bacteria to consume a given amount of organic

material is measured by its biochemical oxygen demand (BOD). Thus, BOD is an indirect measure of the amount of organic material in wastewater and provides a means for predicting effects on receiving waters.

A waste with a high BOD indicates that bacteria will exert a high demand for oxygen dissolved in receiving waters. If this demand is greater than the receiving water's capacity to acquire oxygen from reaeration, then the receiving water will support aquatic life following a discharge. Thus, the wastewater treatment plant must reduce the BOD of raw sewage such that receiving waters can maintain sufficient oxygen to support aquatic life.

2.1.3 Biological Characteristics

Raw domestic sewage contains many types of micro-organisms present in human wastes. Many of these organisms are harmless and provide a seed for building a large biomass in the plant's biological process.

Other organisms, however, are pathogenic (disease-causing) and can threaten public health. Disinfection facilities are provided at the Lawrenceville Wastewater Treatment Plant inactivate or kill harmful organisms before the wastewater is discharged.

2.2 Secondary Biological Wastewater Treatment Processes

As discussed above, bacteria play a vital role in normal biological cycles by converting soluble organic into bacterial cells and inorganic materials. Algae and other plants use the inorganic compounds in forming new cells. The newly-formed bacteria serve as food or protozoa, rotifers, and crustaceans. The bacteria, algae, and minute plant and animal forms are eaten by minnows and other small fish. The cycle continues until large fish are caught and eaten by humans who discharge wastes back into the streams where the cycle begins anew.

While some organic matter is necessary for maintaining natural biological cycles, too much organic material can alter a stream's normal pattern. Sudden discharges of organic matter increase the available food concentration and can allow bacteria to grow at an accelerated rate. Available dissolved oxygen may then be consumed at a rate greater than the stream can naturally replace it. If the organic load continues to increase, the stream will become anaerobic (devoid of oxygen). Animal forms requiring oxygen to live will then die and objectionable odors will be produced. If no further organic material enters the stream, the bacterial population will reach a peak, then begin to decline. As the stream naturally picks up oxygen from the atmosphere, the aerobic cycle will be re-established. Eventually, the stream will return to its original biological condition with a limited food supply and a

relatively low microorganism population.

Secondary biological wastewater treatment essentially duplicates processes carried out in nature in purifying a stream. The main difference is that manmade treatment units and equipment operate under controlled conditions at substantially higher bacterial concentrations, accelerating the process and increase its efficiency.

A secondary wastewater treatment plant, when properly designed and operated, relieves the burden on the receiving stream. Secondary treatment removes oxygen demanding organic material to a level that a receiving stream can assimilate. The secondary biological treatment process at Lawrenceville is a form of the activated sludge system.

ATTACHMENT B

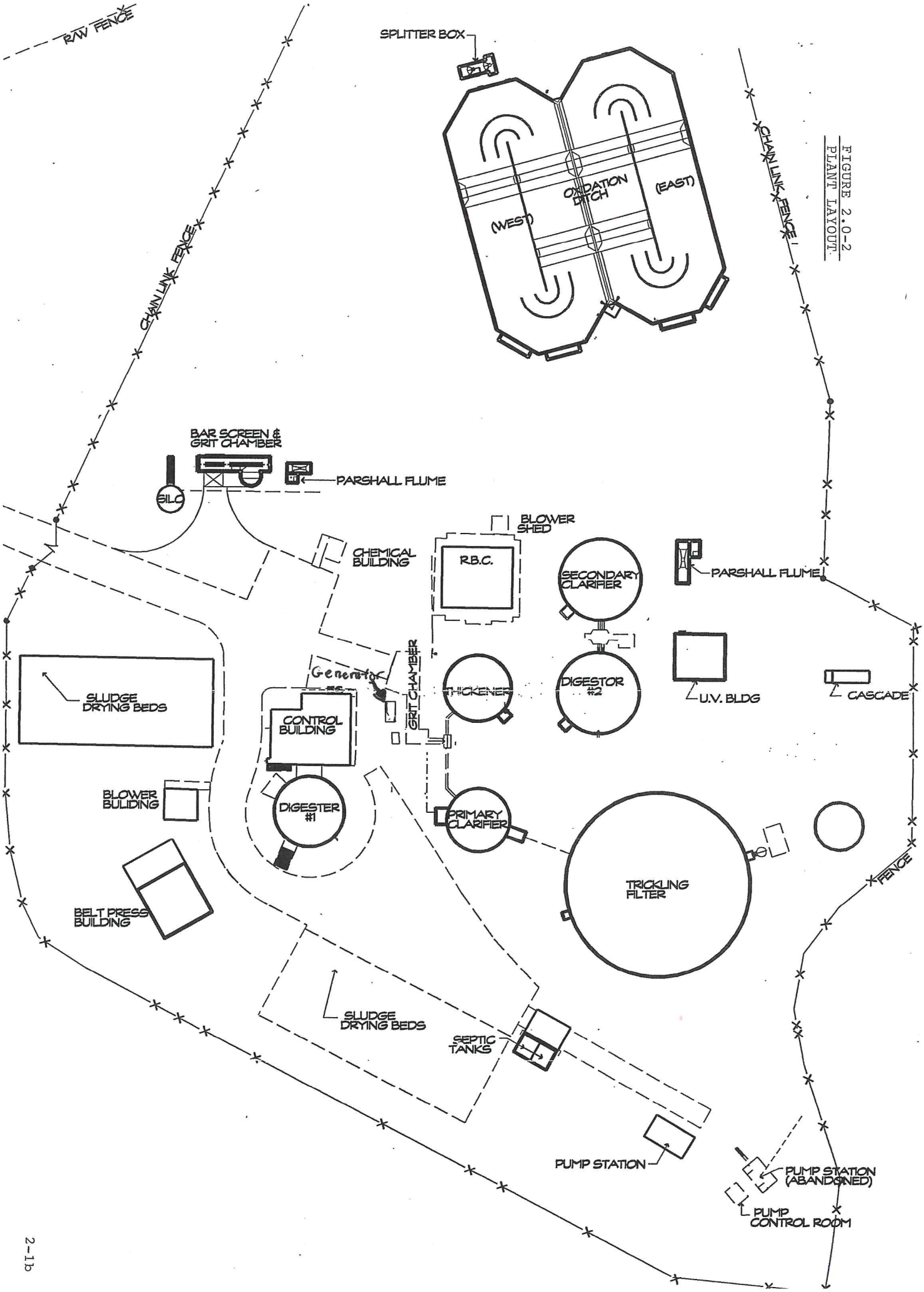


FIGURE 2.0-2
PLANT LAYOUT

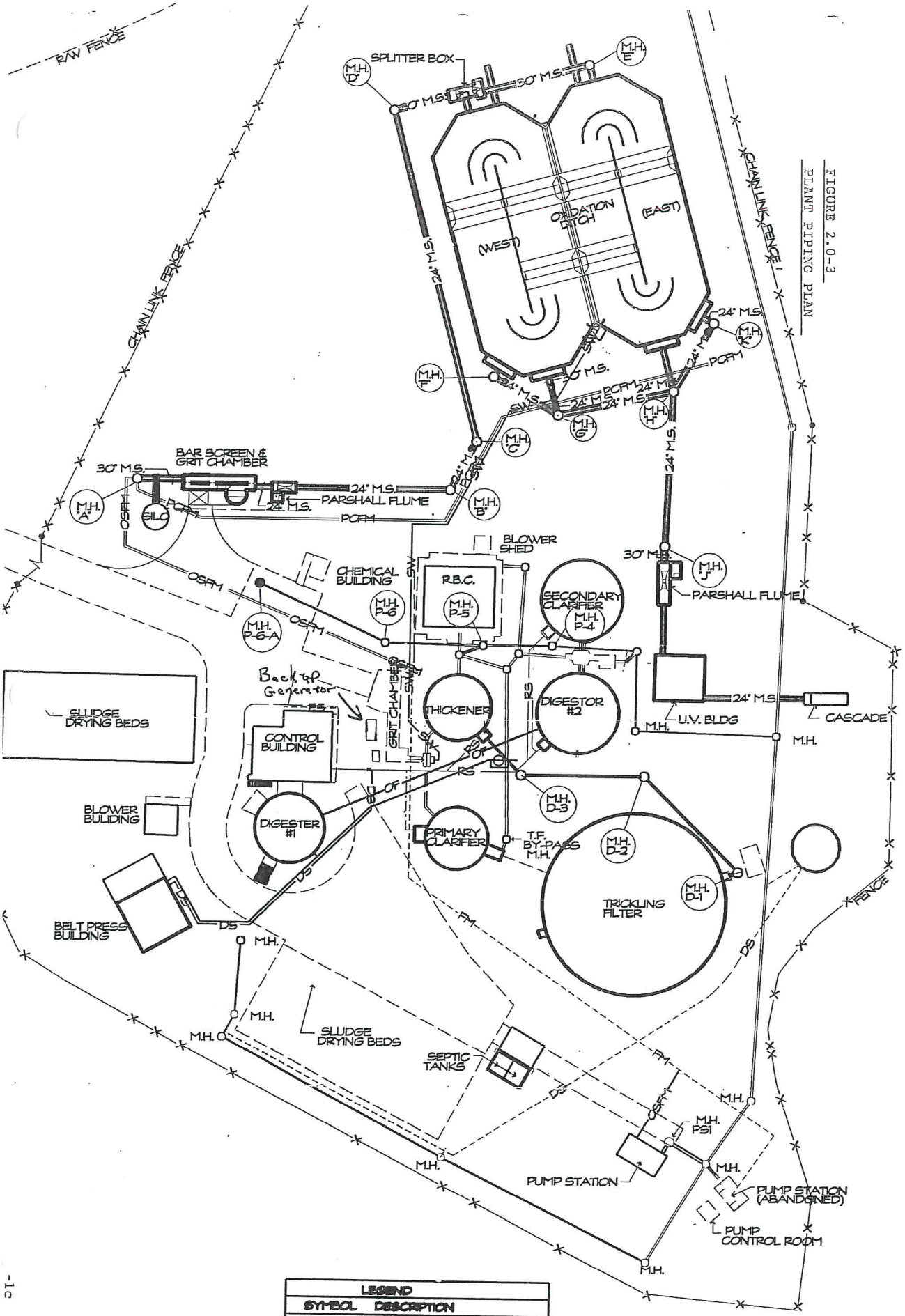


FIGURE 2.0-3

PLANT PIPING PLAN

ATTACHMENT C

Lawrenceville Wastewater Treatment Plant

Summary of Test Results from 2007 - 2011

Average and Max. For 5 Years (2007 - 2011)

Year	Flow		pH		CBOD 5		E. Coli		TSS		Ammonia		Dissolved Oxygen	
	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.
2007	2.314410	0.757777	7.50	7.11	9.00	0.61	888	86	89.00	24.61	1.80	1.38	10.33	8.18
2008	2.113470	0.769306	7.44	7.02	7.00	0.15	9	3	23.20	3.96	0.71	0.42	9.98	8.18
2009	2.615380	0.803158	7.44	7.23	31.00	1.48	9	2	158.93	11.37	3.00	1.32	10.86	8.37
2010	2.847050	0.701019	8.24	7.04	15.00	0.31	5	1	8.70	4.13	1.50	0.70	12.06	8.49
2011	1.546620	0.541181	8.22	7.11	0.71	0.57	8	2	6.20	4.82	0.55	0.49	11.78	8.43
Avg.	***2.287386***	***0.714488***	***7.77***	***7.10***	***12.54***	***0.62***	***184***	***19***	***57.21***	***9.78***	***1.51***	***0.86***	***11.00***	***8.33***
Max.	***2.847050***	***0.803158***	***8.24***	***7.23***	***31.00***	***1.48***	***888***	***86***	***158.93***	***24.61***	***3.00***	***1.38***	***12.06***	***8.49***
	Total Days	*1826*	*Total Test*	*1826*	*Total Test*	*417*	*Total Test*	*1290*	*Total Test*	*394*	*Total Test*	*20*	*Total Test*	*1826*

Year	Total Kjeldahl Nitrogen (TKN)		Nitrate Plus Nitrite Nitrogen		Oil and Grease		Phosphorus (Total)		Total Dissolved Solids (TDS)	
	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.
2007	2.00	1.44								
2008	2.07	1.30								
2009	2.13	1.54								
2010	1.24	1.24								
2011	1.77	1.42								
Avg.	***1.61***	***1.39***	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*
Max.	***2.13***	***1.54***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***
	Total Test	*569*	*Total Test*		*Total Test*		*Total Test*		*Total Test*	

Lawrenceville Wastewater Treatment Plant

Summary of Test Results from 2007 - 2011

Average and Max. For 3 Years (2009 - 2011)

Year	Flow		pH		CBOD 5		E. Coli		TSS		Ammonia		Dissolved Oxygen	
	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.
2009	2.615380	0.803158	7.44	7.23	31.00	1.48	9	2	158.93	11.37	3.00	1.32	10.86	8.37
2010	2.847050	0.701019	8.24	7.04	15.00	0.31	5	1	8.70	4.13	1.50	0.70	12.06	8.49
2011	1.546620	0.541181	8.22	7.11	0.71	0.57	8	2	6.20	4.82	0.55	0.49	11.78	8.43
Avg.	***2.336350***	***0.681786***	***7.97***	***7.13***	***15.57***	***0.79***	***7***	***2***	***57.94***	***6.77***	***1.68***	***0.83***	***11.57***	***8.43***
Max.	***2.847050***	***0.803158***	***8.24***	***7.23***	***31.00***	***1.48***	***9***	***2***	***158.93***	***11.37***	***3.00***	***1.32***	***12.06***	***8.49***
	Total Days	*1095*	*Total Test*	*1095*	*Total Test*	*156*	*Total Test*	*765*	*Total Test*	*153*	*Total Test*	*12*	*Total Test*	*1095*

Year	Total Kjeldahl Nitrogen (TKN)		Nitrate Plus Nitrite Nitrogen		Oil and Grease		Phosphorus (Total)		Total Dissolved Solids (TDS)	
	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.
2009	2.13	1.54								
2010	1.80	1.24								
2011	1.77	1.42								
Avg.	***1.65***	***1.40***	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*
Max.	***2.13***	***1.54***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***
	Total Test	*315*	*Total Test*		*Total Test*		*Total Test*		*Total Test*	

Lawrenceville Wastewater Treatment Plant

Test Results from 2007 - 2011

2007

Month	Flow			pH				$CBOD_5$			E. Coli			TSS			Ammonia		
	Units	MGD			Units	SU			Units	mg/L		Units	MG/L		Units	mg/L		Units	mg/L
	Average	Min	Max	No. of Samples	Average	Min	Max	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average
Jan.	0.86352	0.650070	1.327770	31	6.90	6.56	7.21	23	1.8	0.7	23	11	5	23	22.32	9.6	1	1.20	1.20
Feb.	0.848972	0.691780	1.241760	28	6.96	6.41	7.15	20	9	3.6	20	30	20	20	87	33.5	1	1.10	1.10
Mar.	0.822909	0.077988	1.412440	31	6.99	6.83	7.16	22	2.8	1.2	22	46	15	22	17.24	16.2	1	1.80	1.80
Apr.	0.933245	0.688350	2.314410	30	6.98	6.69	7.35	20	8	1.1	21	12	8	21	89	17.6	1	1.4	1.4
May	0.744380	0.610920	0.859220	31	7.00	6.64	7.16	23	1.2	0.3	23	21	9	23	4.54	3.7	NA	NA	NA
June	0.702609	0.592980	0.958380	30	7.10	6.89	7.30	21	<QL	<QL	21	9	5	21	3.60	3.0	NA	NA	NA
July	0.665608	0.567500	0.936360	31	7.11	6.48	7.40	22	1.2	0.3	22	292	95	22	5.10	4.6	NA	NA	NA
Aug.	0.675134	0.561170	0.756800	31	7.25	7.04	7.47	23	6	0.3	25	888	358	23	10.06	6.2	NA	NA	NA
Sept.	0.688775	0.582650	0.953550	30	7.35	7.17	7.49	20	<QL	<QL	21	507	275	20	5.48	4.2	NA	NA	NA
Oct.	0.760292	0.605530	1.050990	31	7.36	7.23	7.50	5	<QL	<QL	23	243	184	5	6.40	184.5	NA	NA	NA
Nov.	0.666385	0.596060	0.753260	30	7.19	7.00	7.41	4	<QL	<QL	21	90	51	4	10.30	6.9	NA	NA	NA
Dec.	0.721491	0.603290	1.201850	31	7.13	7.00	7.29	5	<QL	<QL	21	12	6	4	8.80	5.5	NA	NA	NA

Month	Dissolved Oxygen			Total Kjeldahl Nitrogen (TKN)			*Nitrate Plus Nitrite Nitrogen*			*Oil and Grease*			*Phosphorus (Total)*			*Total Dissolved Solids (TDS)*		
		Units	mg/L		Units	mg/L		Units	mg/L		Units			Units			Units	
	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average
Jan.	31	10.08	9.08	NA	NA	NA												
Feb.	28	10.33	9.38	NA	NA	NA												
Mar.	31	9.77	9.10	NA	NA	NA												
Apr.	30	9.44	8.63	NA	NA	NA												
May	31	8.48	8.10	23	2.00	1.92												
June	30	7.93	7.60	21	1.44	1.35												
July	31	7.73	7.19	22	1.46	1.36												
Aug.	31	7.74	7.03	23	1.41	1.41												
Sept.	30	7.97	7.38	20	1.30	1.17												
Oct.	31	8.40	7.54	14	1.20	1.19												
Nov.	30	8.94	8.29	13	1.73	1.59												
Dec.	31	9.44	8.83	13	1.67	1.56												

Lawrenceville Wastewater Treatment Plant

Test Results from 2007 - 2011

2007

Month	pH		CBODs		E. Coli		TSS		Ammonia		Dissolved Oxygen		Total Kjeldahl Nitrogen (TKN)		Nitrate Plus Nitrite Nitrogen		Oil and Grease		Phosphorus (Total)		Total Dissolved Solids (TDS)	
	Units	SU	Units	mg/L	Units	N/CML	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L
	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average
Jan.	7.21	6.90	1.80	0.70	11	5	22.32	9.56	1.20	1.20	10.08	9.08	NA	NA								
Feb.	7.15	6.96	9.00	3.60	30	20	87.38	33.46	1.10	1.10	10.33	9.38	NA	NA								
Mar.	7.16	6.99	2.80	1.18	46	15	17.24	16.24	1.80	1.80	9.77	9.10	NA	NA								
Apr.	7.35	6.98	8.00	1.05	12	8	89.00	17.58	1.40	1.40	9.44	8.63	NA	NA								
May	7.16	7.00	1.20	0.26	21	9	4.54	3.66	NA	NA	8.48	8.10	2.00	1.92								
June	7.30	7.10	0.00	0.00	9	5	3.60	3.01	NA	NA	7.93	7.60	1.44	1.35								
July	7.40	7.11	1.20	0.27	292	95	5.10	4.57	NA	NA	7.73	7.19	1.46	1.36								
Aug.	7.47	7.25	6.00	0.26	888	358	10.06	6.24	NA	NA	7.74	7.03	1.41	1.41								
Sept.	7.49	7.35	0.00	0.00	507	275	5.48	4.17	NA	NA	7.97	7.38	1.30	1.17								
Oct.	7.50	7.36	0.00	0.00	243	184	6.40	184.47	NA	NA	8.40	7.54	1.20	1.19								
Nov.	7.41	7.19	0.00	0.00	90	51	10.30	6.90	NA	NA	8.94	8.29	1.73	1.59								
Dec.	7.29	7.13	0.00	0.00	12	6	8.80	5.50	NA	NA	9.44	8.83	1.67	1.56								
Avg.	*7.32*	*7.11*	*2.50*	*0.61*	*180*	*86*	*22.52*	*24.61*	*1.38*	*1.38*	*8.85*	*8.18*	*1.53*	*1.44*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*
Max.	*7.50*	*7.36*	*9.00*	*3.60*	*888*	*358*	*89.00*	*184.47*	*1.80*	*1.80*	*10.33*	*9.38*	*2.00*	*1.92*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
	Total Test	*365*	*Total Test*	*208*	*Total Test*	*263*	*Total Test*	*208*	*Total Test*	*4*	*Total Test*	*365*	*Total Test*	*149*	*Total Test*	*0*	*Total Test*	*0*	*Total Test*	*0*	*Total Test*	*0*

Month	Flow	
	Units	MGD
	Max.	Average
Jan.	1.327770	0.863520
Feb.	1.241760	0.848972
Mar.	1.412440	0.822909
Apr.	2.314410	0.933245
May	0.859220	0.744380
June	0.958380	0.702609
July	0.936360	0.665608
Aug.	0.756800	0.675134
Sept.	0.953550	0.688775
Oct.	1.050990	0.760292
Nov.	0.753260	0.666385
Dec.	1.201850	0.721491
Avg.	*1.147233*	*0.757777*
Max.	*2.314410*	*0.933245*
	Total Days	*365*

Lawrenceville Wastewater Treatment Plant

Test Results from 2007 - 2011

2008

Month	Flow			pH				CBODs			E. Coli			TSS			Ammonia		
	Units	MGD			Units	SU			Units	mg/L		Units			Units	mg/L		Units	mg/L
	Average	Min	Max	No. of Samples	Average	Min	Max	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average
Jan.	0.770278	0.653490	0.964440	31	7.06	6.90	7.24	5	<QL	<QL	23	2	1	5	4.60	4.2	1	<QL	<QL
Feb.	0.810107	0.633830	1.316290	29	6.95	6.78	7.08	4	<QL	<QL	21	2	1	4	5.30	4.0	1	0.71	0.71
Mar.	0.847169	0.684680	1.309430	31	6.95	6.74	7.17	4	<QL	<QL	21	2	1	4	3.80	3.6	1	0.61	0.61
Apr.	0.942164	0.695060	2.113470	30	6.97	6.82	7.11	5	<QL	<QL	22	5	5	5	4	3.2	1	0.36	0.36
May	0.800971	0.671450	1.149930	31	7.01	6.79	7.17	4	7	1.8	22	3	2	4	11.40	5.4	NA	NA	NA
June	0.680624	0.593670	0.954230	30	7.12	6.91	7.27	4	<QL	<QL	21	9	4	4	23.20	9.3	NA	NA	NA
July	0.682749	0.619980	0.808920	31	7.15	6.97	7.34	5	<QL	<QL	23	2	2	5	3.20	2.9	NA	NA	NA
Aug.	0.674137	0.468430	0.879680	31	7.20	7.02	7.44	4	<QL	<QL	21	6	4	4	3.70	2.1	NA	NA	NA
Sept.	0.752675	0.632200	1.219640	30	7.07	6.79	7.26	4	<QL	<QL	22	7	5	4	2.90	2.4	NA	NA	NA
Oct.	0.689269	0.594690	0.823360	31	7.05	6.81	7.25	5	<QL	<QL	23	4	3	5	3.40	3.1	NA	NA	NA
Nov.	0.717673	0.620110	0.897830	30	6.91	6.78	7.04	4	<QL	<QL	20	3	2	4	5.80	3.4	NA	NA	NA
Dec.	0.863859	0.672440	1.380500	31	6.78	6.52	6.94	5	<QL	<QL	23	1	1	5	5.30	3.8	NA	NA	NA

Month	Dissolved Oxygen			Total Kjeldahl Nitrogen (TKN)			Nitrate Plus Nitrite Nitrogen			Oil and Grease			Phosphorus (Total)			Total Dissolved Solids (TDS)		
		Units	mg/L		Units	mg/L		Units	mg/L		Units			Units			Units	
	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average
Jan.	31	9.94	9.32	NA	NA	NA												
Feb.	29	9.98	9.03	NA	NA	NA												
Mar.	31	9.32	8.82	NA	NA	NA												
Apr.	30	9.03	8.36	NA	NA	NA												
May	31	8.96	8.00	13	2.07	1.54												
June	30	8.65	7.45	13	1.60	1.44												
July	31	7.74	7.19	13	1.20	1.21												
Aug.	31	7.38	7.11	13	1.50	1.16												
Sept.	30	7.64	7.33	13	1.23	1.22												
Oct.	31	8.76	7.84	14	1.23	1.20												
Nov.	30	9.29	8.65	12	1.80	1.42												
Dec.	31	9.67	9.08	14	1.27	1.19												

Lawrenceville Wastewater Treatment Plant

Test Results from 2007 - 2011

2008

Month	pH		CBODs		E. Coli		TSS		Ammonia		Dissolved Oxygen		Total Kjeldahl Nitrogen (TKN)		Nitrate Plus Nitrite Nitrogen		Oil and Grease		Phosphorus (Total)		Total Dissolved Solids (TDS)	
	Units	SU	Units	mg/L	Units	N/CML	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L
	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average
Jan.	7.24	7.06	0.00	0.00	2	1	4.60	4.24	0.00	0.00	9.94	9.32	NA	NA								
Feb.	7.08	6.95	0.00	0.00	2	1	5.30	4.00	0.71	0.71	9.98	9.03	NA	NA								
Mar.	7.17	6.95	0.00	0.00	2	1	3.80	3.60	0.61	0.61	9.32	8.82	NA	NA								
Apr.	7.11	6.97	0.00	0.00	5	5	4.30	3.20	0.36	0.36	9.03	8.36	NA	NA								
May	7.17	7.01	7.00	1.75	3	2	11.40	5.43	NA	NA	8.96	8.00	2.07	1.54								
June	7.27	7.12	0.00	0.00	9	4	23.20	9.33	NA	NA	8.65	7.45	1.60	1.44								
July	7.34	7.15	0.00	0.00	2	2	3.20	2.86	NA	NA	7.74	7.19	1.20	1.21								
Aug.	7.44	7.20	0.00	0.00	6	4	3.70	2.13	NA	NA	7.38	7.11	1.50	1.16								
Sept.	7.26	7.07	0.00	0.00	7	5	2.90	2.43	NA	NA	7.64	7.33	1.23	1.22								
Oct.	7.25	7.05	0.00	0.00	4	3	3.40	3.08	NA	NA	8.76	7.84	1.23	1.20								
Nov.	7.04	6.91	0.00	0.00	3	2	5.80	3.38	NA	NA	9.29	8.65	1.80	1.42								
Dec.	6.94	6.78	0.00	0.00	1	1	5.30	3.82	NA	NA	9.67	9.08	1.27	1.19								
Avg.	*7.19*	*7.02*	*0.58*	*0.15*	*4*	*3*	*6.41*	*3.96*	*0.42*	*0.42*	*8.86*	*8.18*	*1.49*	*1.30*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*
Max.	*7.44*	*7.20*	*7.00*	*1.75*	*9*	*5*	*23.20*	*9.33*	*0.71*	*0.71*	*9.98*	*9.32*	*2.07*	*1.54*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
	Total Test	*366*	*Total Test*	*53*	*Total Test*	*262*	*Total Test*	*53*	*Total Test*	*4*	*Total Test*	*366*	*Total Test*	*105*	*Total Test*	*0*	*Total Test*	*0*	*Total Test*	*0*	*Total Test*	*0*

Month	Flow	
	Units	MGD
	Max.	Average
Jan.	0.964440	0.770278
Feb.	1.316290	0.810107
Mar.	1.309430	0.847169
Apr.	2.113470	0.942164
May	1.149930	0.800971
June	0.954230	0.680624
July	0.808920	0.682749
Aug.	0.879680	0.674137
Sept.	1.219640	0.752675
Oct.	0.823360	0.689269
Nov.	0.897830	0.717673
Dec.	1.380500	0.863859
Avg.	*1.151477*	*0.769306*
Max.	*2.113470*	*0.942164*
	Total Days	*366*

Lawrenceville Wastewater Treatment Plant

Test Results from 2007 - 2011

2009

Month	Flow			pH				$CBOD_5$			E. Coli			TSS			Ammonia		
	Units		MGD		Units	SU			Units	mg/L		Units	MG/L		Units	mg/L		Units	mg/L
	Average	Min	Max	No. of Samples	Average	Min	Max	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average
Jan.	0.837626	0.655370	1.142800	31	6.70	6.5	6.92	4	31	7.8	22	2	1	6	158.93	81.5	1	0.33	0.33
Feb.	0.783073	0.696210	0.925240	28	6.62	6.44	6.84	4	5	1.3	20	2	2	4	9.90	7.5	1	3.00	3.00
Mar.	0.982024	0.748980	1.608920	31	6.68	6.45	7.04	4	6	1.5	22	1	1	4	7.60	4.4	1	1.30	1.30
Apr.	0.774644	0.625700	0.979690	30	6.81	6.67	6.98	5	5.4	5.0	22	3	2	5	10.70	7.0	1	<QL	0.63
May	0.807878	0.652840	1.100120	31	7.74	6.75	7.01	4	<QL	<QL	21	5	2	4	6.90	4.9	NA	NA	NA
June	0.732738	0.543760	0.732738	30	6.86	6.67	7.05	4	9	2.3	22	2	2	4	7.90	6.2	NA	NA	NA
July	0.710793	0.608000	0.966940	31	7.15	6.71	7.42	5	<QL	<QL	23	6	3	5	5.50	4.1	NA	NA	NA
Aug.	0.718505	0.627810	0.864610	31	7.21	7.01	7.44	4	<QL	<QL	21	2	2	4	3.20	1.9	NA	NA	NA
Sept.	0.723272	0.579230	0.915030	30	7.15	6.91	7.44	5	<QL	<QL	22	9	7	5	5.80	4.5	NA	NA	NA
Oct.	0.590982	0.500960	0.684710	31	7.17	6.91	7.41	4	<QL	<QL	22	5	3	4	9.50	5.9	NA	NA	NA
Nov.	0.941029	0.554390	2.615380	30	7.01	6.73	7.32	4	<QL	<QL	21	3	2	4	4.90	4.1	NA	NA	NA
Dec.	1.035332	0.695910	1.575250	31	9.69	6.63	7.05	5	<QL	<QL	23	1	1	5	6.30	4.3	NA	NA	NA

Month	Dissolved Oxygen			Total Kjeldahl Nitrogen (TKN)			*Nitrate Plus Nitrite Nitrogen*			*Oil and Grease*			*Phosphorus (Total)*			*Total Dissolved Solids (TDS)*		
		Units	mg/L		Units	mg/L		Units	mg/L		Units			Units			Units	
	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average
Jan.	31	10.86	9.21	NA	NA	NA												
Feb.	28	10.82	9.62	NA	NA	NA												
Mar.	31	10.70	9.87	NA	NA	NA												
Apr.	30	9.89	8.65	NA	NA	NA												
May	31	8.40	8.40	13	1.7	1.6												
June	30	7.73	7.25	13	1.7	1.6												
July	31	7.66	7.20	14	1.3	1.3												
Aug.	31	7.56	7.09	13	1.4	1.3												
Sept.	30	8.34	7.16	13	1.9	1.8												
Oct.	31	8.70	7.70	13	2.1	1.8												
Nov.	30	9.68	8.61	13	1.9	1.5												
Dec.	31	10.80	9.69	13	1.7	1.4												

Lawrenceville Wastewater Treatment Plant

Test Results from 2007 - 2011

2009

Month	*pH*		CBOD5		E. Coli		TSS		Ammonia		Dissolved Oxygen		Total Kjeldahl Nitrogen (TKN)		*Nitrate Plus Nitrite Nitrogen*		*Oil and Grease*		*Phosphorus (Total)*		*Total Dissolved Solids (TDS)*	
	Units	*SU*	*Units*	*mg/L*	*Units*	*N/CML*	*Units*	*mg/L*	*Units*	*mg/L*	*Units*	*mg/L*	*Units*	*mg/L*	*Units*	*mg/L*	*Units*	*mg/L*	*Units*	*mg/L*	*Units*	*mg/L*
	Max	*Average*	*Max*	*Average*	*Max*	*Average*	*Max*	*Average*	*Max*	*Average*	*Max*	*Average*	*Max*	*Average*	*Max*	*Average*	*Max*	*Average*	*Max*	*Average*	*Max*	*Average*
Jan.	6.92	6.70	31.00	7.75	2	1	158.93	81.52	0.33	0.33	10.86	9.21	NA	NA								
Feb.	6.84	6.62	5.00	1.25	2	2	9.90	7.53	3.00	3.00	10.82	9.62	NA	NA								
Mar.	7.04	6.68	6.00	1.50	1	1	7.60	4.43	1.30	1.30	10.70	9.87	NA	NA								
Apr.	6.98	6.81	5.40	5.00	3	2	10.70	7.02	0.00	0.63	9.89	8.65	NA	NA								
May	7.01	7.74	0.00	0.00	5	2	6.90	4.93	NA	NA	8.40	8.40	1.70	1.57								
June	7.05	6.86	9.00	2.25	2	2	7.90	6.20	NA	NA	7.73	7.25	1.67	1.60								
July	7.42	7.15	0.00	0.00	6	3	5.50	4.12	NA	NA	7.66	7.20	1.30	1.30								
Aug.	7.44	7.21	0.00	0.00	2	2	3.20	1.90	NA	NA	7.56	7.09	1.43	1.34								
Sept.	7.44	7.15	0.00	0.00	9	7	5.80	4.52	NA	NA	8.34	7.16	1.93	1.84								
Oct.	7.41	7.17	0.00	0.00	5	3	9.50	5.88	NA	NA	8.70	7.70	2.13	1.78								
Nov.	7.32	7.01	0.00	0.00	3	2	4.90	4.08	NA	NA	9.68	8.61	1.93	1.50								
Dec.	7.05	9.69	0.00	0.00	1	1	6.30	4.32	NA	NA	10.80	9.69	1.70	1.36								
Avg.	***7.16***	***7.23***	***4.70***	***1.48***	***3***	***2***	***19.76***	***11.37***	***1.16***	***1.32***	***9.26***	***8.37***	***1.73***	***1.54***	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*
Max.	***7.44***	***9.69***	***31.00***	***7.75***	***9***	***7***	***158.93***	***81.52***	***3.00***	***3.00***	***10.86***	***9.87***	***2.13***	***1.84***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***
	Total Test	*365*	*Total Test*	*52*	*Total Test*	*261*	*Total Test*	*54*	*Total Test*	*4*	*Total Test*	*365*	*Total Test*	*105*	*Total Test*	*0*	*Total Test*	*0*	*Total Test*	*0*	*Total Test*	*0*

Month	*Flow*	
	Units	MGD
	Max.	*Average*
Jan.	1.142800	0.837626
Feb.	0.925240	0.783073
Mar.	1.608920	0.982024
Apr.	0.979690	0.774644
May	1.100120	0.807878
June	0.732738	0.732738
July	0.966940	0.710793
Aug.	0.864610	0.718505
Sept.	0.915030	0.723272
Oct.	0.684710	0.590982
Nov.	2.615380	0.941029
Dec.	1.575250	1.035332
Avg.	***1.175952***	***0.803158***
Max.	***2.615380***	***1.035332***
	Total Days	*365*

Lawrenceville Wastewater Treatment Plant

Test Results from 2007 - 2011

2010

Month	Flow			pH				$CBOD_5$			E. Coli			TSS			Ammonia		
	Units		MGD		Units	SU			Units	mg/L		Units	N/CML		Units	mg/L		Units	mg/L
	Average	Min	Max	No. of Samples	Average	Min	Max	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average
Jan.	0.819082	0.685890	1.353200	31	6.89	6.77	7.03	4	<QL	<QL	21	2	1	4	8.70	5.70	1	1.50	1.50
Feb.	1.042054	0.658520	2.847050	28	6.80	6.48	7.04	4	<QL	<QL	20	4	2	4	5.60	3.63	1	<QL	0.48
Mar.	0.812929	0.608730	2.253660	31	6.89	6.24	7.13	5	<QL	<QL	23	1	1	5	4.40	3.52	1	<QL	0.80
Apr.	0.721518	0.590220	1.112370	30	6.80	6.55	7.04	4	15	3.8	22	1	1	2	3.50	4.10	1	<QL	<QL
May	0.706663	0.549540	1.109930	31	7.87	6.29	8.24	4	<QL	<QL	21	1	1	4	4.00	2.48	NA	NA	NA
June	0.622969	0.537070	0.760030	30	7.10	6.93	7.23	5	<QL	<QL	22	2	2	5	8.50	6.46	NA	NA	NA
July	0.593316	0.509320	0.978780	31	7.10	6.94	7.26	4	<QL	<QL	22	2	2	4	8.60	6.80	NA	NA	NA
Aug.	0.608235	0.528860	0.915700	31	7.06	6.84	7.24	4	<QL	<QL	22	1	1	3	5.80	2.80	NA	NA	NA
Sept.	0.586271	0.500910	1.153280	30	7.03	6.72	7.29	5	<QL	<QL	22	2	1	4	4.30	5.68	NA	NA	NA
Oct.	0.668924	0.464470	1.895900	31	7.01	6.71	7.26	4	<QL	<QL	21	1	1	4	6.10	3.25	NA	NA	NA
Nov.	0.605153	0.520400	0.820220	30	6.95	6.77	7.12	4	<QL	<QL	22	3	2	4	2.80	1.68	NA	NA	NA
Dec.	0.625114	0.523190	0.799900	31	6.97	6.70	7.30	5	<QL	<QL	23	5	2	4	2.80	3.48	NA	NA	NA

Month	Dissolved Oxygen			Total Kjeldahl Nitrogen (TKN)			*Nitrate Plus Nitrite Nitrogen*			*Oil and Grease*			*Phosphorus (Total)*			*Total Dissolved Solids (TDS)*		
		Units	mg/L		Units	mg/L		Units	mg/L		Units			Units			Units	
	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average
Jan.	31	10.90	10.00	NA	NA	NA												
Feb.	28	12.06	10.53	NA	NA	NA												
Mar.	31	10.67	9.91	NA	NA	NA												
Apr.	30	9.81	8.85	NA	NA	NA												
May	31	8.44	7.87	13	1.17	0.89												
June	30	7.63	7.32	13	1.33	1.18												
July	31	7.67	7.16	13	1.37	1.20												
Aug.	31	7.81	7.12	13	1.40	1.27												
Sept.	30	7.50	7.20	13	1.43	1.43												
Oct.	31	8.64	7.69	13	1.80	1.69												
Nov.	30	9.71	8.91	13	1.32	1.10												
Dec.	31	10.30	9.34	14	1.23	1.15												

Lawrenceville Wastewater Treatment Plant

Test Results from 2007 - 2011

2010

Month	pH		CBODs		E. Coli		TSS		Ammonia		Dissolved Oxygen		Total Kjeldahl Nitrogen (TKN)		Nitrate Plus Nitrite Nitrogen		Oil and Grease		Phosphorus (Total)		Total Dissolved Solids (TDS)	
	Units	SU	Units	mg/L	Units	N/CML	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L
	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average
Jan.	7.03	6.89	0.00	0.00	2	1	8.70	5.70	1.50	1.50	10.90	10.00	NA	NA								
Feb.	7.04	6.80	0.00	0.00	4	2	5.60	3.63	0.00	0.48	12.06	10.53	NA	NA								
Mar.	7.13	6.89	0.00	0.00	1	1	4.40	3.52	0.00	0.80	10.67	9.91	NA	NA								
Apr.	7.04	6.80	15.00	3.75	1	1	3.50	4.10	0.00	0.00	9.81	8.85	NA	NA								
May	8.24	7.87	0.00	0.00	1	1	4.00	2.48	NA	NA	8.44	7.87	1.17	0.89								
June	7.23	7.10	0.00	0.00	2	2	8.50	6.46	NA	NA	7.63	7.32	1.33	1.18								
July	7.26	7.10	0.00	0.00	2	2	8.60	6.80	NA	NA	7.67	7.16	1.37	1.20								
Aug.	7.24	7.06	0.00	0.00	1	1	5.80	2.80	NA	NA	7.81	7.12	1.40	1.27								
Sept.	7.29	7.03	0.00	0.00	2	1	4.30	5.68	NA	NA	7.50	7.20	1.43	1.43								
Oct.	7.26	7.01	0.00	0.00	1	1	6.10	3.25	NA	NA	8.64	7.69	1.80	1.69								
Nov.	7.12	6.95	0.00	0.00	3	2	2.80	1.68	NA	NA	9.71	8.91	1.32	1.10								
Dec.	7.30	6.97	0.00	0.00	5	2	2.80	3.48	NA	NA	10.30	9.34	1.23	1.15								
Avg.	***7.27***	***7.04***	***1.25***	***0.31***	***2***	***1***	***5.43***	***4.13***	***0.38***	***0.70***	***9.26***	***8.49***	***1.38***	***1.24***	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*
Max.	***8.24***	***7.87***	***15.00***	***3.75***	***5***	***2***	***8.70***	***6.80***	***1.50***	***1.50***	***12.06***	***10.53***	***1.80***	***1.69***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***
	Total Test	*365*	*Total Test*	*52*	*Total Test*	*261*	*Total Test*	*47*	*Total Test*	*4*	*Total Test*	*365*	*Total Test*	*105*	*Total Test*	*0*	*Total Test*	*0*	*Total Test*	*0*	*Total Test*	*0*

Month	Flow	
	Units	MGD
	Max.	Average
Jan.	1.353200	0.819082
Feb.	2.847050	1.042054
Mar.	2.253660	0.812929
Apr.	1.112370	0.721518
May	1.109930	0.706663
June	0.760030	0.622969
July	0.978780	0.593316
Aug.	0.915700	0.608235
Sept.	1.153280	0.586271
Oct.	1.895900	0.668924
Nov.	0.820220	0.605153
Dec.	0.799900	0.625114
Avg.	***1.333335***	***0.701019***
Max.	***2.847050***	***1.042054***
	Total Days	*365*

Lawrenceville Wastewater Treatment Plant

Test Results from 2007 - 2011

2011

Month	Flow			pH				$CBOD_5$			E. Coli			TSS			Ammonia		
	Units	MGD			Units	SU			Units	mg/L		Units			Units	mg/L		Units	mg/L
	Average	Min	Max	No. of Samples	Average	Min	Max	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average
Jan.	0.640519	0.549150	0.889840	31	6.96	6.73	7.08	4	<QL	<QL	21	2	1	4	6.2	3.2	1	0.55	0.55
Feb.	0.478263	0.549100	0.776220	28	6.96	6.4	7.09	4	<QL	5.5	20	2	2	4	6.1	5.5	1	0.34	0.34
Mar.	0.568868	0.066838	1.418600	31	6.90	6.71	7.23	5	<QL	<QL	23	1	1	5	0.64	3.9	1	<QL	0.86
Apr.	0.558986	0.586040	1.171480	30	6.91	6.58	7.24	4	<QL	<QL	21	1	1	4	0.80	4.8	1	0.22	0.22
May	0.512695	0.514850	0.893310	31	7.09	6.82	7.56	4	0.71	1.3	22	1	1	4	0.93	4.7	NA	NA	NA
June	0.452478	0.511690	0.639220	30	7.10	6.82	7.31	5	<QL	<QL	22	1	1	5	0.86	4.3	NA	NA	NA
July	0.544000	0.503690	1.495100	31	7.18	6.80	7.34	4	<QL	<QL	21	2	2	4	0.83	3.6	NA	NA	NA
Aug.	0.536904	0.557550	1.546620	31	7.24	7.03	7.54	5	<QL	<QL	23	3	3	5	0.60	3.7	NA	NA	NA
Sept.	0.569152	0.581210	1.483130	30	7.27	7.02	7.50	4	<QL	<QL	22	8	5	4	1.19	5.3	NA	NA	NA
Oct.	0.532603	0.559560	0.901520	31	7.35	6.94	7.56	4	<QL	<QL	21	2	2	4	1.89	7.8	NA	NA	NA
Nov.	0.567210	0.543720	1.177580	30	7.21	7.02	8.22	5	<QL	<QL	5	1	1	5	1.00	6.1	NA	NA	NA
Dec.	0.567624	0.580870	0.908160	31	7.11	6.96	7.33	4	<QL	<QL	22	1	1	4	0.90	4.9	NA	NA	NA

Month	Dissolved Oxygen			Total Kjeldahl Nitrogen (TKN)			*Nitrate Plus Nitrite Nitrogen*			*Oil and Grease*			*Phosphorus (Total)*			*Total Dissolved Solids (TDS)*		
		Units	mg/L		Units	mg/L		Units	mg/L		Units			Units			Units	
	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average	No. of Samples	Max	Average
Jan.	31	11.78	10.17	NA	NA	NA												
Feb.	28	10.35	9.60	NA	NA	NA												
Mar.	31	10.31	9.49	NA	NA	NA												
Apr.	30	9.52	8.64	NA	NA	NA												
May	31	9.34	7.84	13	0.5	1.1												
June	30	7.56	7.28	13	0.4	1.0												
July	31	7.49	7.06	13	0.5	1.0												
Aug.	31	8.90	7.33	14	1.8	2.0												
Sept.	30	8.68	7.29	13	1.7	2.2												
Oct.	31	9.89	8.06	13	0.6	1.4												
Nov.	30	10.48	8.99	13	0.6	1.3												
Dec.	31	10.60	9.41	13	0.6	1.3												

Lawrenceville Wastewater Treatment Plant

Test Results from 2007 - 2011

2011

Month	pH		CBOD5		E. Coli		TSS		Ammonia		Dissolved Oxygen		Total Kjeldahl Nitrogen (TKN)		Nitrate Plus Nitrite Nitrogen		Oil and Grease		Phosphorus (Total)		Total Dissolved Solids (TDS)	
	Units	SU	Units	mg/L	Units	N/CML	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L	Units	mg/L
	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average
Jan.	7.08	6.96	0.00	0.00	2	1	6.20	3.23	0.55	0.55	11.78	10.17	NA	NA								
Feb.	7.09	6.96	0.00	5.55	2	2	6.10	5.55	0.34	0.34	10.35	9.60	NA	NA								
Mar.	7.23	6.90	0.00	0.00	1	1	0.64	3.94	0.00	0.86	10.31	9.49	NA	NA								
Apr.	7.24	6.91	0.00	0.00	1	1	0.80	4.75	0.22	0.22	9.52	8.64	NA	NA								
May	7.56	7.09	0.71	1.25	1	1	0.93	4.67	NA	NA	9.34	7.84	0.53	1.13								
June	7.31	7.10	0.00	0.00	1	1	0.86	4.26	NA	NA	7.56	7.28	0.42	0.98								
July	7.34	7.18	0.00	0.00	2	2	0.83	3.62	NA	NA	7.49	7.06	0.49	0.97								
Aug.	7.54	7.24	0.00	0.00	3	3	0.60	3.72	NA	NA	8.90	7.33	1.77	2.01								
Sept.	7.50	7.27	0.00	0.00	8	5	1.19	5.30	NA	NA	8.68	7.29	1.71	2.18								
Oct.	7.56	7.35	0.00	0.00	2	2	1.89	7.78	NA	NA	9.89	8.06	0.63	1.42								
Nov.	8.22	7.21	0.00	0.00	1	1	1.00	6.08	NA	NA	10.48	8.99	0.64	1.33								
Dec.	7.33	7.11	0.00	0.00	1	1	0.90	4.95	NA	NA	10.60	9.41	0.59	1.30								
Avg.	7.42	7.11	0.06	0.57	2	2	1.83	4.82	0.28	0.49	9.58	8.43	0.85	1.42	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Max.	8.22	7.35	0.71	5.55	8	5	6.20	7.78	0.55	0.86	11.78	10.17	1.77	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total Test	365	Total Test	52	Total Test	243	Total Test	52	Total Test	4	Total Test	365	Total Test	105	Total Test	0	Total Test	0	Total Test	0	Total Test	0

Month	Flow	
	Units	MGD
	Max.	Average
Jan.	0.889840	0.640519
Feb.	0.776220	0.478263
Mar.	1.418600	0.568868
Apr.	1.171480	0.558986
May	0.893310	0.512695
June	0.639220	0.452478
July	1.495100	0.544000
Aug.	1.546620	0.536904
Sept.	1.483130	0.569152
Oct.	0.901520	0.532603
Nov.	1.177580	0.567210
Dec.	0.908160	0.567624
Avg.	1.108398	0.544109
Max.	1.546620	0.640519
	Total	365

Lawrenceville Wastewater Treatment Plant

Number of Samples and Results for Zinc in mg/L (2007 - 2011)

Month	Year									
	2007		2008		2009		2010		2011	
	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg
January			0.033	0.033	0.012	0.012	0.024	0.024		
February	0.020	0.020								
March									0.035	0.035
April										
May										
June										
July			0.029	0.029	0.015	0.015	0.029	0.029		
August										
September	0.036	0.036							0.025	0.025
October										
November										
December										
Max.	**0.036**	**0.036**	**0.033**	**0.033**	**0.015**	**0.015**	**0.029**	**0.029**	**0.035**	**0.035**
Avg.	**0.028**	**0.028**	**0.031**	**0.031**	**0.014**	**0.014**	**0.027**	**0.027**	**0.030**	**0.030**
Total Samples	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

Number of Samples and Results for Zinc (2009 - 2011)

Month	Year					
	2009		2010		2011	
	Max	Avg	Max	Avg	Max	Avg
January	0.012	0.012	0.024	0.024		
February						
March					0.035	0.035
April						
May						
June						
July	0.015	0.015	0.029	0.029		
August						
September					0.025	0.025
October						
November						
December						
Max.	**0.015**	**0.015**	**0.029**	**0.029**	**0.035**	**0.035**
Avg.	**0.014**	**0.014**	**0.027**	**0.027**	**0.030**	**0.030**
Total Samples	**2**	**2**	**2**	**2**	**2**	**2**

Lawrenceville Wastewater Treatment Plant

Winter and Summer Effluent Temps. For 2007 - 2011

Year	Winter				Summer			
	January		December		July		August	
	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.
2007	13.9	18.2	15.1	18.5	25.8	28.2	27.4	28.7
2008	13.0	17.0	14.3	15.7	26.0	27.4	26.4	27.5
2009	12.4	14.5	13.6	18.9	25.3	26.9	26.7	27.8
2010	11.2	12.5	13.4	19.4	26.4	28.1	26.9	28.0
2011	11.4	13.1	15.7	19.2	21.5	29.5	26.4	28.4
Avg.	**12.4**	**15.1**	**14.4**	**18.3**	**25.0**	**28.0**	**26.8**	**28.1**
Max.	**13.9**	**18.2**	**15.7**	**19.4**	**26.4**	**29.5**	**27.4**	**28.7**

Winter and Summer Effluent Temps. For 2009 - 2011

Year	Winter				Summer			
	January		December		July		August	
	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.
2009	12.4	14.5	13.6	18.9	25.3	26.9	26.7	27.8
2010	11.2	12.5	13.4	19.4	26.4	28.1	26.9	28.0
2011	11.4	13.1	15.7	19.2	21.5	29.5	26.4	28.4
Avg.	**11.7**	**13.4**	**14.2**	**19.2**	**24.4**	**28.2**	**26.7**	**28.1**
Max.	**12.4**	**14.5**	**15.7**	**19.4**	**26.4**	**29.5**	**26.9**	**28.4**

Cleaning wastewater every day for a better Bay.

1432 Air Rail Avenue, Virginia Beach, VA 23455-3002 • 757.460.4205 • Fax: 757.460.6586 • www.hrsd.com

02/08/12 - Lawrenceville STP - Permit Application

This analytical report contains 8 pages

C.J. Dean
Town Manager
Town of Lawrenceville
400 N. Main Street
Lawrenceville, VA 23868

cjdean@lawrencevilleweb.com

cc: Robert Williams, Town of Lawrenceville wwtp@lawrencevilleweb.com

Date Sent: 02/24/12

HRSD CEL, Central Environmental Laboratory is VELAP/NELAC accredited by DCLS, the Division of Consolidated Laboratory Services.

VA Laboratory ID#: 460011
Effective Date: December 06, 2011
Expiration Date: June 14, 2012
Certificate # 1328

Analytical test results meet all requirements of VELAP/NELAC unless otherwise noted under the analysis.

Test results relate only to the sample tested. Clients should be aware that a critical step in chemical or microbiological analysis is the collection of the sample.

If you have any questions concerning this report, please do not hesitate to contact
Danny Barker, TSD Environmental Scientist at (757) 460-4247
dbarker@hrsd.com
Robin Parnell, CEL Laboratory Manager at (757) 460-4203.
rparnell@hrsd.com
Cindi Reno, CEL Administrative Assistant at (757) 460-4205.
creno@hrsd.com

Cleaning wastewater every day for a better Bay.

1432 Air Rail Avenue, Virginia Beach, VA 23455-3002 • 757.460.4205 • Fax: 757.460.6586 • www.hrsd.com

CENTRAL ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Project: Lawrenceville Wastewater Treatment Plant - Permit Application
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FNE
Sample Date: 02/08/12

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Miscellaneous Parameters							
Ammonia-N w/Distillation	LACH 10-107-06-1-C	mg/L	0.59	0.20	GBROWN	02/13/12	11:19
Nitrate/Nitrite-Nitrogen (NOx)	LACH 10-107-04-1-A	mg/L	1.28	0.20	VJOHNS	02/14/12	13:09
Cyanide	LACH 10-204-00-1-X	ug/L	<10	10	AMOORE	02/16/12	11:51
Total Kjeldahl Nitrogen	LACH 10-107-06-2-I	mg/L	1.33	0.50	VJOHNS	02/10/12	10:43
Total Phosphorous	LACH 10-115-01-1-E	mg/L	0.21	0.20	VJOHNS	02/09/12	12:12
Oil and Grease HEM	EPA 1664A	mg/L	<5.0	5.0	RMORGA	02/14/12	06:40
Total Dissolved Solids	SM 2540C	mg/L	199	1	RCASTR	02/10/12	16:30
Total Phenol	LACH 10-210-00-1-B	mg/L	<0.05	0.05	AMOORE	02/16/12	09:46
Hardness (as $CaCO_3$)	SM 2340B	mg eq $CaCO_3$/L	38.0	0.2	SWILLI	02/10/12	10:32
Total Metals							
Chromium	EPA 200.8	ug/L	<1.0	1.0	KWILLI	02/10/12	10:59
Dissolved Metals							
Antimony	EPA 200.8	ug/L	<1.0	1.0	KWILLI	02/10/12	10:41
Arsenic	EPA 200.8	ug/L	<1.0	1.0	KWILLI	02/10/12	10:41
Beryllium	EPA 200.8	ug/L	<0.10	0.10	KWILLI	02/10/12	10:41
Cadmium	EPA 200.8	ug/L	<0.10	0.10	KWILLI	02/10/12	10:41
Chromium III (measured as Total Chromium)	Calculation	ug/L	<1.0	1.0			
Chromium VI (measured as Total Chromium)	Calculation	ug/L	<1.0	1.0			
Copper	EPA 200.8	ug/L	1.67	0.50	KWILLI	02/10/12	10:41
Lead	EPA 200.8	ug/L	<0.10	0.10	KWILLI	02/10/12	10:41
Mercury	EPA 245.1	ug/L	<0.10	0.10	SWILLI	02/15/12	11:10
Nickel	EPA 200.8	ug/L	0.50	0.50	KWILLI	02/10/12	10:41
Selenium	EPA 200.8	ug/L	<0.50	0.50	KWILLI	02/10/12	10:41
Silver	EPA 200.8	ug/L	<0.10	0.10	KWILLI	02/10/12	10:41
Thallium	EPA 200.8	ug/L	<0.10	0.10	KWILLI	02/10/12	10:41
Zinc	EPA 200.8	ug/L	31.1	1.0	KWILLI	02/10/12	10:41

Notes:
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Cleaning wastewater every day for a better Bay.

1432 Air Rail Avenue, Virginia Beach, VA 23455-3002 • 757.460.4205 • Fax: 757.460.6586 • www.hrsd.com

CENTRAL ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Project: Lawrenceville Wastewater Treatment Plant - Permit Application
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FNE
Sample Date: 02/08/12

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Volatile Organics							
Acrolein	EPA 624	ug/L	<50.0	50.0	SLOPEZ	02/09/12	11:28
Acrylonitrile	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
Benzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
Bromoform	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
Carbon Tetrachloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
Chlorodibromomethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
Chloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
2-Chloro-ethylvinyl Ether	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
Chloroform	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
Dichlorobromomethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
1,2 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
1,3 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
1,4 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
1,1-Dichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
1,2-Dichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
1,1-Dichloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
1,2-trans-Dichloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
1,2-Dichloropropane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
1,3 Dichloropropylene (1,3-Dichloropropene)[2]	EPA 624	ug/L	<20.0	20.0	SLOPEZ	02/09/12	13:27
Ethylbenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
Methyl Bromide	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
Methyl Chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
Methylene Chloride (Dichloromethane)	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
Monochlorobenzene (Chlorobenzene)	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
1,1,2,2-Tetrachloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
Tetrachloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
Toluene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
1,1,1-Trichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
1,1,2-Trichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
Trichloroethylene (Trichloroethene)	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27
Vinyl Chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	02/09/12	13:27

Notes:

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

[2] *1,3-Dichloropropylene is the total of cis-1,3-Dichloropropylene and trans-1,3-Dichloropropylene.*

Cleaning wastewater every day for a better Bay.

1432 Air Rail Avenue, Virginia Beach, VA 23455-3002 • 757.460.4205 • Fax: 757.460.6586 • www.hrsd.com

CENTRAL ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Project: Lawrenceville Wastewater Treatment Plant - Permit Application
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FNE
Sample Date: 02/08/12

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Semi-Volatile Organics-Acid Extractables							
p-Chloro-m-cresol	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
2-Chlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
2,4 Dichlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
2,4 Dimethylphenol	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
4,6-Dinitro-o-cresol (2-Methyl-4,6-dinitrophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
2,4-Dinitrophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	02/16/12	18:12
2-Nitrophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
4-Nitrophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Pentachlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Phenol	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
2,4,6 Trichlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Semi-Volatile Organics - Base Neutral Extractables							
Acenaphthene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Acenapthylene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Anthracene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Benzidine	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Benzo(a)anthracene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Benzo(a)pyrene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Benzo(b)fluoranthene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Benzo(k)fluoranthene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Benzo(GHI)Perylene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Bis-(2-chloroethyl)-Ether	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Bis-(2-Chloroethoxy) Methane	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Bis-2-(Chloroisopropyl) Ether	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Bis-2-ethyl hexyl phthalate (Di-2-Ethylhexyl Phtl	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
4-Bromophenyl Phenyl Ether	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Butyl benzyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
2-Chloronaphthalene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
4-Chlorophenyl phenyl ether	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Chrysene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Dibenzo(a,h) anthracene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Dibutyl phthalate (Di-n-butyl phthalate)	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Di-n-octyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07

Notes:
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Cleaning wastewater every day for a better Bay.

1432 Air Rail Avenue, Virginia Beach, VA 23455-3002 • 757.460.4205 • Fax: 757.460.6586 • www.hrsd.com

CENTRAL ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Project: Lawrenceville Wastewater Treatment Plant - Permit Application
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FNE
Sample Date: 02/08/12

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
3,3-Dichlorobenzidine	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Diethyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Dimethyl Phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
2,4-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
2,6-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
1,2-Diphenylhydrazine[2]	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Fluoranthene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Fluorene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Hexachlorobenzene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Hexachlorobutadiene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Hexachlorocyclopentadiene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Hexachloroethane	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Indeno(1,2,3-cd)pyrene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Isophorone	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Naphthalene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Nitrobenzene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
N-Nitrosodi-n-propyl amine	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
N-Nitrosodimethylamine	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
N-Nitrosodiphenylamine[3]	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Phenanthrene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
Pyrene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07
1,2,4 Trichlorobenzene	EPA 625	ug/L	<10.0	10.0	IGERAS	02/14/12	23:07

Notes:

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

[2] *1,2-Diphenylhydrazine gets converted to Azobenzene in the extraction process.*

[3] *N-Nitrosodiphenylamine decomposes in the injection port to Diphenylamine.*

Authorization: Robin Parnell **Date:** 2/23/12

Lab Manager/QA Manager

CENTRAL ENVIRONMENTAL LABORATORY
QUALITY ASSURANCE REPORT
Level 1

Project: Lawrenceville STP - Semi-Annual Metals
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FB; FNE
Sample Date: 02/08/12

Analytical Run Information	Sb	As	Be	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Tl	Zn
Method	200.8	200.8	200.8	200.8	200.8	200.8	200.8	245.1	200.8	200.8	200.8	200.8	200.8
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Limit of Detection (LOD)	0.22	0.06	0.01	0.006	0.04	0.09	0.01	0.03	0.08	0.12	0.05	0.03	0.24
Limit of Quantitation (LOQ)	1.0	1.00	0.10	0.100	1.0	0.50	0.10	0.10	0.50	0.50	0.10	0.10	1.0
Method Blank (MB)	<0.22	<0.06	<0.01	*0.011	<0.04	<0.09	<0.01	<0.03	<0.08	<0.12	<0.05	<0.03	<0.24
Dissolved Metals	**Sb**	**As**	**Be**	**Cd**		**Cu**	**Pb**	**Hg**	**Ni**	**Se**	**Ag**	**Tl**	**Zn**
Sample ID: LA FNE													
Matrix Spike Conc.	5.0	5.0	0.5	0.5		2.5	0.5	1.0	2.5	2.5	0.5	0.5	25.0
MS Percent Recovery	97%	96%	91%	92%		93%	98%	101%	96%	100%	88%	98%	98%
MSD Percent Recovery	101%	103%	97%	97%		101%	102%	96%	94%	100%	92%	100%	104%
MS/MSD RPD	4	7	7	6		4	3	5	2	1	5	3	3
Total Metals					**Cr**								
Sample ID: LA FNE													
Matrix Spike Conc.					5.0								
MS Percent Recovery					98%								
MSD Percent Recovery					97%								
MS/MSD RPD					<1								

MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference
*Report Limit is lowest concentration at which quantitation is demonstrated. Values below report limit should not be used for compliance determinations due to a high degree of uncertainty.

Validated By: _____ Date: 022212

HRSD
Cleaning wastewater every day for a better Bay.

CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

CHAIN OF CUSTODY

PROJECT NAME/CODE: LA VPDES 2A

ANALYSES REQUESTED, CGN & NUMBER OF CONTAINERS

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	TOTAL METALS (5)	DISSOLVED METALS (5S)	Semi Vol (9-9B)	Semi Vol (9-9H)	Nutrients Presd (7)	Nutrients Unpresvd (17)	Ammonia (7)	Solids (1)	VOA (10-10B)	VOA (10-10E)	Total Phenol (3)	Oil & Grease (8-8C)	Cyanide (4)			Project in Lims? Yes ✓ No	HRSD Use Only: Presv'd Checked	HRSD Use Only: CONT. COUNT
Field Blank	LA	FB	2/8/2012	1056	MW	L	C	1	1															✓	2
Final Effluent	LA	FNE	2/8/2012	1056	MW	L	C	1	1		9	1	1	1	1									✓	13
Final Effluent	LA	FNE	2/8/2012	1020	MW	L	G										6							✓	6
Final Effluent	LA	FNE	2/8/2012	1025	MW	L	G											1						✓	1
Final Effluent	LA	FNE	2/8/2012	1035	MW	L	G												4					✓	4
Final Effluent	LA	FNE	2/8/2012	1625	MW	L	G													1				✓	1

COMMENTS:

For Ground Water Use Only
Temp. Blank 1 ____ °C
Temp. Blank 2 ____ °C

Relinquished by / Signature	Date/Time 02/08/12/1574
Received by / Signature	Date/Time 2/8/12 1574
Relinquished by / Signature	Date/Time
Received by / Signature	Date/Time
Relinquished by / Signature	Date/Time
Received by / Signature	Date/Time
Relinquished by / Signature	Date/Time
Received by / Signature	Date/Time

All sample(s) met proper *preservation requirements. Yes ✓ No ____ Int MW

Temp. Requirement

Where required, submitted samples were transported in coolers maintained at ≤ 6 °C.

Yes ✓ No ____

Int MW

***Preservatives**

- *Hg, Metals (pH<2 - HNO3) (Clean metals check in section)
- *O&G (pH<2 - HCl, check in section) & store ≤ 6 °C
- CN^- (pH>12 - NaOH) & store ≤ 6 °C
- *Sulfide (pH>9 - NaOH+ZnAc) & store ≤ 6 °C
- *Micro ($Na_3S_2O_3$ + EDTA) & store < 10 °C
- *COD, NUT, Phenols (pH<2 - H_2SO_4) & store ≤ 6 °C
- *TOC (pH<2 - H_3PO_4) & store ≤ 6 °C
- *BOD, TSS, TVSS, Turbidity, Surfactant, Sulfate store ≤ 6 °C
- *NUT Non Acidified, Conductivity, Organics store ≤ 6 °C
- *Cr (VI) (pH 9.3 - 9.7 - $(NH_4)_2SO_4$) & store ≤ 6 °C

Sample Type: C=Composite, G=Grab Matrix: L= Liquid , S = Solid CGN: Container Group Number

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

FIELD RECORD (S)

HRSD • CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVE., VIRGINIA BEACH, VIRGINIA 23455-3002 • (757) 460-4205 • FAX: (757) 460-6586
www.hrsd.com

09/01/10 and 09/15/10 - Lawrenceville – Permit Application
This Analytical Report contains 14 pages

C.J. Dean
Town Manager
Town of Lawrenceville
400 N. Main Street
Lawrenceville, VA 23868

cc: Robert Williams

Date Sent: 10/13/10

HRSD is VELAP/NELAC accredited by DCLS, the Division of Consolidated Laboratory Services.

VA Laboratory ID#: 460011
Effective Date: June 15, 2010
Expiration Date: June 14, 2011
Certificate # 643

Analytical test results meet all requirements of VELAP/NELAC unless otherwise noted under the individual analysis.

Test results relate only to the sample tested. Clients should be aware that a critical step in chemical or microbiological analysis is the collection of the sample.

If you have any questions concerning this report, please do not hesitate to call Danny Barker, TSD Environmental Scientist at (757) 460-4247, Robin Parnell, CEL Laboratory Manager at (757) 460-4203 or Cindi Reno, CEL Administrative Assistant at (757) 460-4205.

Lawrenceville VPDES Field Sheet

Information To Be Checked Before The Start of Each Sampling Event

1. Does the Final Effluent have any abnormal characteristics (odor, color)? Y / (N)

If the answer to the above questions is NO proceed to the next section. Please contact a supervisor if the answer is YES.

2. A. Average Plant flow for the last five days: 669,000 gal
   B. Expected Plant flow for the next 24 hours: 700,000 gal

3. List the last three days of Final Effluent TSS with the most recent last: NA, _____, _____

4. Contact Closure: (Expected Flow / 100 / 40) 700,000 gal / 100 / 40 = 175 Pulses per sample.

5. Samplers for Final Effluent & FB calibrated at 400 ml per sample. (Desired volume/ 40) 16.2
   Final Effluent Start Time / Date: 1056 / 012412 Calibrated to: 400 mL
   FB Start Time / Date: 1056 / 012412 Calibrated to: 400 mL
   (Metals only FB)

The above information has been completed prior to the beginning of the sampling event. Int._____

Sampling personnel: M. Wiggins, R. Hunt, _____

Information Check At The End Of The Sampling Event

1. Are all lids, compression assemblies and caps secure? (Y) / N
2. Final Effluent TSS for the sampling period: 4.5 mg/L
3. Plant flow for the sampling period 747,000 / 702,000 gal
4. Number of samples collected in each Final Effluent & FB composite container:
   Final Effluent: 40
   FB: 40
5. Final Effluent & FB composite end time and date:
   Final Effluent End Time / Date: 1056 012512
   FB End Time / Date: 1056 012512
6. Is Temperature in collection container at the end of sampling <6° C? (Y) / N
7. Are sample volumes equal in all composite containers? (Y) / N
8. Grab times and dates:
   FB VOA: NA ~~012512~~ MW
   Oil & Grease: 1045 012512
   Total Phenol: 1035 012512
   FNE VOA: 1030 012512
   Cyanide: 1035 012512

Sampling personnel: M. Wiggins, R. Hunt, _____

Please contact project lead with any problems incurred during the sampling event.

Record any other information that could affect sample results:

HRSD • CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVE., VIRGINIA BEACH, VIRGINIA 23455-3002 • (757) 460-4205 • FAX: (757) 460-6586
www.hrsd.com

ANALYTICAL REPORT

Project: Lawrenceville Wastewater Treatment Plant - Permit Application
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FNE
Sample Date: 09/01/10

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Miscellaneous Parameters							
Ammonia-N w/Distillation	EPA 350.1	mg/L	0.93	0.20	KSMITH	09/15/10	10:10
Nitrate/Nitrite-Nitrogen (NOx)	EPA 353.2	mg/L	0.79	0.20	KSMITH	09/08/10	14:06
Cyanide	EPA 335.4	ug/L	<10	10	AMOORE	09/10/10	11:12
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	1.76	0.50	AMOORE	09/05/10	12:28
Total Phosphorous	EPA 365.1	mg/L	0.28	0.20	LREED	09/02/10	12:58
Oil and Grease HEM	EPA 1664A	mg/L	6.4	5.0	RMORGA	09/07/10	07:45
Total Dissolved Solids	SM 2540C	mg/L	223	1	TGAY	09/02/10	07:05
Total Phenol	EPA 420.4	mg/L	<0.05	0.05	AMOORE	09/10/10	09:11

Notes:
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

HRSD • CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVE., VIRGINIA BEACH, VIRGINIA 23455-3002 • (757) 460-4205 • FAX: (757) 460-6586
www.hrsd.com

ANALYTICAL REPORT

Project: Lawrenceville Wastewater Treatment Plant - Permit Application
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FNE
Sample Date: 09/01/10

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Volatile Organics							
Acrolein	EPA 624	ug/L	<50.0	50.0	SLOPEZ	09/03/10	17:35
Acrylonitrile	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
Benzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
Bromoform	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
Carbon Tetrachloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
Chlorodibromomethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
Chloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
2-Chloro-ethylvinyl Ether	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
Chloroform	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
Dichlorobromomethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
1,2 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
1,3 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
1,4 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
1,1-Dichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
1,2-Dichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
1,1-Dichloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
1,2-trans-Dichloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
1,2-Dichloropropane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
1,3 Dichloropropylene (1,3-Dichloropropene)[2]	EPA 624	ug/L	<20.0	20.0	SLOPEZ	09/03/10	18:35
Ethylbenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
Methyl Bromide	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
Methyl Chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
Methylene Chloride (Dichloromethane)	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
Monochlorobenzene (Chlorobenzene)	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
1,1,2,2-Tetrachloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
Tetrachloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
Toluene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
1,1,1-Trichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
1,1,2-Trichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
Trichloroethylene (Trichloroethene)	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35
Vinyl Chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	09/03/10	18:35

Notes:

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

[2] *1,3-Dichloropropylene is the total of cis-1,3-Dichloropropylene and trans-1,3-Dichloropropylene.*

HRSD • CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVE., VIRGINIA BEACH, VIRGINIA 23455-3002 • (757) 460-4205 • FAX: (757) 460-6586
www.hrsd.com

ANALYTICAL REPORT

Project: Lawrenceville Wastewater Treatment Plant - Permit Application
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FNE
Sample Date: 09/01/10

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Semi-Volatile Organics-Acid Extractables							
p-Chloro-m-cresol	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
2-Chlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
2,4 Dichlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
2,4 Dimethylphenol	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
4,6-Dinitro-o-cresol (2-Methyl-4,6-dinitrophenol)	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
2,4-Dinitrophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
2-Nitrophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
4-Nitrophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Nonylphenol[Δ]	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Pentachlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Phenol	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
2,4,6 Trichlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Semi-Volatile Organics - Base Neutral Extractables							
Acenaphthene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Acenapthylene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Anthracene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Benzidine	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Benzo(a)anthracene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Benzo(a)pyrene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Benzo(b)fluoranthene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Benzo(k)fluoranthene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Benzo(GHI)Perylene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Bis-(2-chloroethyl)-Ether	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Bis-(2-Chloroethoxy) Methane	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Bis-2-(Chloroisopropyl) Ether	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Bis-2-ethyl hexyl phthalate (Di-2-Ethylhexyl Phthlate)	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
4-Bromophenyl Phenyl Ether	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Butyl benzyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
2-Chloronaphthalene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
4-Chlorophenyl phenyl ether	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Chrysene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Dibenzo(a,h) anthracene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Dibutyl phthalate (Di-n-butyl phthalate)	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Di-n-octyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36

Notes:
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*
[Δ] *Parameter is not included in HRSD CEL VELAP scope of accreditation.*

HRSD • CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVE., VIRGINIA BEACH, VIRGINIA 23455-3002 • (757) 460-4205 • FAX: (757) 460-6586
www.hrsd.com

ANALYTICAL REPORT

Project: Lawrenceville Wastewater Treatment Plant - Permit Application
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FNE
Sample Date: 09/01/10

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
3,3-Dichlorobenzidine	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Diethyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Dimethyl Phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
2,4-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
2,6-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
1,2-Diphenylhydrazine[2,Δ]	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Fluoranthene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Fluorene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Hexachlorobenzene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Hexachlorobutadiene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Hexachlorocyclopentadiene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Hexachloroethane	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Indeno(1,2,3-cd)pyrene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Isophorone	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Naphthalene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Nitrobenzene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
N-Nitrosodi-n-propyl amine	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
N-Nitrosodimethylamine	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
N-Nitrosodiphenylamine[3]	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Phenanthrene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Pyrene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
1,2,4 Trichlorobenzene	EPA 625	ug/L	<10.0	10.0	IGERAS	09/10/10	02:36
Pesticides & PCB's							
Aldrin[4]	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
alpha-BHC (Hexachlorocyclohexane)	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
beta-BHC (Hexachlorocyclohexane)	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
Alpha-Endosulfan[4]	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
Beta-Endosulfan	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
Chlordane	EPA 608	ug/L	ND	0.2	CCURRY	09/08/10	23:42
DDD[4]	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
DDE	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
DDT	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
Dieldrin	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42

Notes:

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

[2] *1,2-Diphenylhydrazine gets converted to Azobenzene in the extraction process.*

[3] *N-Nitrosodiphenylamine decomposes in the injection port to Diphenylamine.*

[4] *The recovery of Aldrin, alpha-Endosulfan and DDD in the matrix spike duplicate were below the acceptable limit. The recovery of the same compounds in the matrix spike and laboratory fortified blank were all within acceptable limits. All other method required QCwere met.*

[Δ] *Parameter is not included in HRSD CEL VELAP scope of accreditation.*

HRSD • CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVE., VIRGINIA BEACH, VIRGINIA 23455-3002 • (757) 460-4205 • FAX: (757) 460-6586
www.hrsd.com

ANALYTICAL REPORT

Project: Lawrenceville Wastewater Treatment Plant - Permit Application
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FNE
Sample Date: 09/01/10

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Pesticides & PCB's cont.							
Endrin	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
Endrin aldehyde	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
Endosulfan sulfate	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
Heptachlor	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
Heptachlor epoxide	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
Kepone	EPA 608	ug/L	<0.08	0.80	CCURRY	09/10/10	15:49
Lindane	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
Methoxychlor$^{\Delta}$	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
Mirex$^{\Delta 2}$	EPA 608	ug/L	<0.05	0.05	CCURRY	09/08/10	23:42
PCB 1016	EPA 608	ug/L	ND	1.00	CCURRY	09/08/10	23:42
PCB 1221	EPA 608	ug/L	ND	1.00	CCURRY	09/08/10	23:42
PCB 1232	EPA 608	ug/L	ND	1.00	CCURRY	09/08/10	23:42
PCB 1242	EPA 608	ug/L	ND	1.00	CCURRY	09/08/10	23:42
PCB 1248	EPA 608	ug/L	ND	1.00	CCURRY	09/08/10	23:42
PCB 1254	EPA 608	ug/L	ND	1.00	CCURRY	09/08/10	23:42
PCB 1260	EPA 608	ug/L	ND	1.00	CCURRY	09/08/10	23:42
PCB Total	EPA 608	ug/L	ND	7.00	CCURRY	09/08/10	23:42
Toxaphene	EPA 608	ug/L	ND	5.0	CCURRY	09/08/10	23:42
Organophosphorous Pesticides							
Demeton$^{\Delta}$	EPA 622	ug/L	<0.10	0.10	CCURRY	09/17/10	18:33
Diazinon	EPA 622	ug/L	<0.10	0.10	CCURRY	09/17/10	18:33
Guthion	EPA 622	ug/L	<0.10	0.10	CCURRY	09/17/10	18:33
Malathion	EPA 622	ug/L	<0.10	0.10	CCURRY	09/17/10	18:33
Chlorpyrifos (Dursban)	EPA 622	ug/L	<0.10	0.10	CCURRY	09/17/10	18:33
Parathion	EPA 622	ug/L	<0.10	0.10	CCURRY	09/17/10	18:33

Notes:

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

[2] *The recovery of Mirex in the matrix and matrix spike duplicate was below the acceptable limit due to possible matrix effect. The recovery of Mirex in the laboratory fortified blank was within acceptable limit. All other method required QC were met.*

[Δ] *Parameters are not included in HRSD CEL VELAP scope of accreditation.*

Authorization: Robin Parnell **Date:** 10/4/10

HRSD • CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVE., VIRGINIA BEACH, VIRGINIA 23455-3002 • (757) 460-4205 • FAX: (757) 460-6586
www.hrsd.com

ANALYTICAL REPORT

Project: Lawrenceville Wastewater Treatment Plant - Permit Application
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FNE
Sample Date: 09/15/10

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Miscellaneous Parameters							
Sulfide (Hydrogen Sulfide)	ASTM D 4658-03	mg/L	<0.1	0.1	RMORGA	09/20/10	08:00
Hardness (as $CaCO_3$)	SM 2340B	mg eq $CaCO_3$/L	39.5	0.1	SWILLI	09/30/10	09:40
Total Metals							
Chromium	EPA 200.8	ug/L	<1.0	1.0	CBATO	09/24/10	11:08
Dissolved Metals							
Antimony	EPA 200.8	ug/L	<0.50	0.50	CBATO	09/24/10	10:33
Arsenic	EPA 200.8	ug/L	<1.0	1.0	CBATO	09/24/10	10:33
Beryllium	EPA 200.8	ug/L	<0.10	0.10	CBATO	09/24/10	10:33
Cadmium	EPA 200.8	ug/L	<0.1	0.1	CBATO	09/24/10	10:33
Chromium III (measured as Total Chromium)	Calculation	ug/L	<1.0	1.0			
Chromium VI (measured as Total Chromium)	Calculation	ug/L	<1.0	1.0			
Chromium	EPA 200.8	ug/L	<1.0	1.0	CBATO	09/24/10	10:33
Copper	EPA 200.8	ug/L	1.88	0.10	CBATO	09/24/10	10:33
Lead	EPA 200.8	ug/L	<0.10	0.10	CBATO	09/24/10	10:33
Mercury	EPA 245.1	ug/L	<0.10	0.10	SLABOC	09/24/10	08:58
Nickel	EPA 200.8	ug/L	0.74	0.50	CBATO	09/24/10	10:33
Selenium	EPA 200.8	ug/L	<0.50	0.50	CBATO	09/24/10	10:33
Silver	EPA 200.8	ug/L	<0.05	0.05	CBATO	09/24/10	10:33
Thallium	EPA 200.8	ug/L	<0.10	0.10	CBATO	09/24/10	10:33
Zinc	EPA 200.8	ug/L	23.8	1.0	CBATO	09/24/10	10:33

Notes:
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: Robin Parnell **Date:** 10/4/10

QUALITY ASSURANCE REPORT
Level 1

Project: Lawrenceville Wastewater Treatment Plant - Permit Application
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FNE
Sample Date: 09/15/10

Analytical Run Information	Sb	As	Be	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Tl	Zn
Method	200.8	200.8	200.8	200.8	200.8	200.8	200.8	245.1	200.8	200.8	200.8	200.8	200.8
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Method Detection Limit (MDL)	0.016	0.03	0.011	0.009	0.06	0.012	0.014	0.03	0.07	0.03	0.015	0.014	0.55
Report Limit (RL)	0.5	1.0	0.10	0.1	1.0	0.10	0.10	0.10	0.50	0.50	0.10	0.10	1.0
Average LRB	0.122*	<0.03	<0.011	0.028*	<0.06	<0.012	<0.014	<0.03	<0.07	<0.03	0.016*	0.037*	<0.55
Dissolved Metals	**Sb**	**As**	**Be**	**Cd**	**Cr**	**Cu**	**Pb**	**Hg**	**Ni**	**Se**	**Ag**	**Tl**	**Zn**
Sample ID: LA FNE													
Matrix Spike Conc.	2.0	10.0	0.5	0.5	10.0	25.0	10.0	1.0	10.0	10.0	5.0	0.5	100.0
MS Percent Recovery	99%	103%	101%	104%	96%	92%	101%	119%	92%	105%	94%	102%	91%
MSD Percent Recovery	102%	103%	88%	102%	94%	92%	101%	116%	93%	106%	96%	100%	90%
MS/MSD RPD	3	<1	14	2	1	1	1	3	1	<1	2	3	1

LRB - Laboratory Reagent Blank
MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference
**Report Limit is lowest concentration at which quantitation is demonstrated. Values below Report Limit should not be used for compliance determinations due to a high degree of uncertainty.*

Validated By: _____ **Date:** 10/04/10

CHAIN OF CUSTODY

HRSD
Cleaning wastewater every day for a better Bay.

CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

PROJECT NAME/CODE: LA VPDES 2A

ANALYSES REQUESTED, CGN & NUMBER OF CONTAINERS

Project in Lims? Yes ____ No ✓

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	TOTAL METALS (5)	DISSOLVED METALS (5S)	Semi Vol (9-9B)	Semi Vol (9-9o)	Nutrients Presd (7)	Nutrients Unpresvd (17)	Ammonia (7)	TDS (1)	VOA (10-10B)	VOA (10-10E)	Total Phenol (3)	Oil & Grease (8-8A)	Cyanide (4)			HRSD Use Only: Presv'd Checked	HRSD Use Only: CONT. COUNT
Field Blank	LA	FB	9/1/2010	1000	MW	L	G									3							✓	3
Final Effluent	LA	FNE	9/1/2010	1040	MW	L	C				16	1	1	1	1								✓	20
Final Effluent	LA	FNE	9/1/2010	1000	MW	L	G										6						✓	6
Final Effluent	LA	FNE	9/1/2010	1010	MW	L	G											1					✓	1
Final Effluent	LA	FNE	9/1/2010	1025	MW	L	G												2				✓	2
Final Effluent	LA	FNE	9/1/2010	1030	MW	L	G												2				✓	2
Final Effluent	LA	FNE	9/1/2010	1010	MW	L	G													1			✓	1

COMMENTS:

For Ground Water Use Only
Temp Blank 1 ____ °C
Temp Blank 2 ____ °C

Relinquished by / Signature		Date/Time 09/01/10 1447
Received by / Signature		Date/Time 9/1/10 1447
Relinquished by / Signature		Date/Time
Received by / Signature		Date/Time
Relinquished by / Signature		Date/Time
Received by / Signature		Date/Time
Relinquished by / Signature		Date/Time
Received by / Signature		Date/Time

Temp. Requirement

Where required, submitted samples were transported in coolers maintained at ≤ 6 °C.

Yes ✓ No ____

Int MW

***Preservatives**

- *Hg, Metals (pH<2 - HNO3) (Clean metals check in section)
- *O&G (pH<2 - HCl, check in section) & store ≤ 6 °C
- CN^- (pH>12 - NaOH) & store ≤ 6 °C
- *Sulfide (pH>9 - NaOH+ZnAc) & store ≤ 6 °C
- *Micro ($Na_2S_2O_3$ + EDTA) & store < 10 °C
- *COD, NUT, Phenols (pH<2 - H_2SO_4) & store ≤ 6 °C
- *TOC (pH<2 - H_3PO_4) & store ≤ 6 °C
- *BOD, TSS, TVSS, Turbidity, Surfactant, Sulfate store ≤ 6 °C
- *NUT Non Acidified, Conductivity, Organics store ≤ 6 °C
- *Cr (VI) (pH 9.3 - 9.7 - $(NH_4)_2SO_4$) & store ≤ 6 °C

All sample(s) met proper *preservation requirements. Yes ✓ No ____ Int GH

Sample Type: C=Composite, G=Grab Matrix: L= Liquid , S = Solid CGN: Container Group Number

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

HRSD
Cleaning wastewater every day for a better Bay.

CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

CHAIN OF CUSTODY

PROJECT NAME/CODE: LA VPDES 2A

ANALYSES REQUESTED, CGN & NUMBER OF CONTAINERS

Project in Lims? Yes ____ No ✓

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	TOTAL METALS (5)	DISSOLVED METALS (5S)	Sulfide (18A) (18-18A)	HRSD Use Only: Presv'd Checked	HRSD Use Only: CONT. COUNT
Field Blank	LA	FB	091510	1315	MW	L	C	1	1		✓	2
Final Effluent	LA	FNE	091510	1315	MW	L	C	1	1	2	✓	4

COMMENTS:

For Ground Water Use Only
Temp Blank: ____ °C
Temp Blank: ____ °C

Relinquished by / Signature		Date/Time 091610 / 0650
Received by / Signature		Date/Time 091610 / 0650
Relinquished by / Signature		Date/Time 091610 / 0720
Received by / Signature		Date/Time 9/10/10 0720
Relinquished by / Signature		Date/Time
Received by / Signature		Date/Time
Relinquished by / Signature		Date/Time
Received by / Signature		Date/Time

Temp. Requirement

Where required, submitted samples were transported in coolers maintained at ≤ 6 °C.

Yes ✓ No ____

Int KBM

***Preservatives**

- *Hg, Metals (pH<2 - HNO3) (Clean metals check in section)
- *O&G (pH<2 - HCl, check in section) & store ≤ 6 °C
- CN^- (pH>12 - NaOH) & store ≤ 6 °C
- *Sulfide (pH>9 - NaOH+ZnAc) & store ≤ 6 °C
- *Micro ($Na_2S_2O_3$ + EDTA) & store < 10 °C
- *COD, NUT, Phenols (pH<2 - H_2SO_4) & store ≤ 6 °C
- *TOC (pH<2 - H_3PO_4) & store ≤ 6 °C
- *BOD, TSS, TVSS, Turbidity, Surfactant, Sulfate store ≤ 6 °C
- *NUT Non Acidified, Conductivity, Organics store ≤ 6 °C
- *Cr (VI) (pH 9.3 - 9.7 - $(NH_4)_2SO_4$) & store ≤ 6 °C

All sample(s) met proper *preservation requirements. Yes ✓ No ____ Int CH/1

Sample Type: C=Composite, G=Grab Matrix: L= Liquid , S = Solid CGN: Container Group Number

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

FIELD RECORD (S)

HRSD • CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVE., VIRGINIA BEACH, VIRGINIA 23455-3002 • (757) 460-4205 • FAX: (757) 460-6586
www.hrsd.com

08/10/10 – Lawrenceville
This Analytical Report contains 4 pages

C.J. Dean
Town Manager
Town of Lawrenceville
400 N. Main Street
Lawrenceville, VA 23868

cc: Robert Williams

Date Sent: 08/16/10

HRSD is VELAP/NELAC accredited by DCLS, the Division of Consolidated Laboratory Services. Analytical test results meet all requirements of VELAP/NELAC unless otherwise noted under the individual analysis.

Test results relate only to the sample tested. Clients should be aware that a critical step in chemical or microbiological analysis is the collection of the sample.

If you have any questions concerning this report, please do not hesitate to call Danny Barker, TSD Environmental Scientist at (757) 460-4247, Robin Parnell, CEL Laboratory Manager at (757) 460-4203 or Cindi Reno, CEL Administrative Assistant at (757) 460-4205.

Lawrenceville VPDES Field Sheet

Information To Be Checked Before The Start of Each Sampling Event

1. Does the Final Effluent have any abnormal characteristics (odor, color)? Y (N)

If the answer to the above questions is NO proceed to the next section. Please contact a supervisor if the answer is YES.

2. A. Average Plant flow for the last five days: ~ 566,000 gal
   B. Expected Plant flow for the next 24 hours: ~ 550,000 gal

3. List the last three days of Final Effluent TSS with the most recent last: NA, _____, _____

4. Contact Closure: (Expected Flow / 100 / 40) 138 Pulses per sample. (550,000 gal)

5. Samplers for Final Effluent & FB calibrated at 450 / 175 (TBT) ml per sample. (Desired volume/ 40) (18000 mL)
   Final Effluent Start Time / Date: 1040 083110 Calibrated to: 450 mL (TBT 175 mL)
   FB Start Time / Date: 1040 083110 Calibrated to: 450 mL

The above information has been completed prior to the beginning of the sampling event. Int. MW

Sampling personnel: M. Wiggins, C. Thompson, _____

Information Check At The End Of The Sampling Event

1. Are all lids, compression assemblies and caps secure? (Y) / N
2. Final Effluent TSS for the sampling period: 2.2 mg/L (090110) (083110)
3. Plant flow for the sampling period 544,400 gal, 590,280 gal (083110) (090110)
4. Number of samples collected in each Final Effluent & FB composite container:
   Final Effluent: 42
   FB: NA
5. Final Effluent & FB composite end time and date:
   Final Effluent End Time / Date: 1040 090110 (Organics & TBT)
   FB End Time / Date: NA
6. Is Temperature in collection container at the end of sampling <6° C? (Y) / N
7. Are sample volumes equal in all composite containers? (Y) / N
8. Grab times and dates:
   FB VOA: 1000 090110 FNE VOA: 1000 090110
   Oil & Grease: 1025/1030 090110 Cyanide: 1010 ~~0916~~ 090110 MW
   Total Phenol: 1016 090110

Sampling personnel: M. Wiggins, C. Thompson _____

Please contact project lead with any problems incurred during the sampling event.

Record any other information that could affect sample results:
No Metal Samples Due To Improper Preservation.
For Metal Sample Bottles.

Lawrenceville VPDES Field Sheet

Information To Be Checked Before The Start of Each Sampling Event

1. Does the Final Effluent have any abnormal characteristics (odor, color)? Y / (N)

If the answer to the above questions is NO proceed to the next section. Please contact a supervisor if the answer is YES.

2. A. Average Plant flow for the last five days: ~ 566,000 gal
   B. Expected Plant flow for the next 24 hours: ~ 600,000 gal
3. List the last three days of Final Effluent TSS with the most recent last: NA , _____ , _____
4. Contact Closure: (Expected Flow 600,000 / 100 140) 150 Pulses per sample.
5. Samplers for Final Effluent & FB calibrated at 300 ml per sample. (Desired volume 12 L / 40)
   Final Effluent Start Time / Date: 1315 / 091410 Calibrated to: 300 mL
   FB Start Time / Date: 1315 / 091410 Calibrated to: 300 mL

The above information has been completed prior to the beginning of the sampling event. Int. MW

Sampling personnel: M. Wiggins , K. Martin, _____

Information Check At The End Of The Sampling Event

1. Are all lids, compression assemblies and caps secure? (Y) / N
2. Final Effluent TSS for the sampling period: 3.7 mg/L (091510) / 091410 091510
3. Plant flow for the sampling period 613,430 gal , 624530 gal
4. Number of samples collected in each Final Effluent & FB composite container:
   Final Effluent: 42
   FB: 42
5. Final Effluent & FB composite end time and date:
   Final Effluent End Time / Date: 1315 091510
   FB End Time / Date: 1315 091510
6. Is Temperature in collection container at the end of sampling <6° C? (Y) / N
7. Are sample volumes equal in all composite containers? (Y) / N
8. Grab times and dates:
   FB VOA: NA FNE VOA: NA
   Oil & Grease: NA Cyanide: NA
   Total Phenol: NA

Sampling personnel: M. Wiggins , K. Martin , _____

Please contact project lead with any problems incurred during the sampling event.

Record any other information that could affect sample results:
Metals & Sulfide Samples Collected.

HRSD • CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVE., VIRGINIA BEACH, VIRGINIA 23455-3002 • (757) 460-4205 • FAX: (757) 460-6586
www.hrsd.com

ANALYTICAL REPORT

Project: Lawrenceville Wastewater Treatment Plant
Customer Sample ID: EFF Flume
Project Code: LA
Sample Point: FLU
Sample Date: 08/10/10

Analyte	Method	Unit	Result	Report Limit	Analyst	Analysis Date	Analysis Time
Total Metals							
Antimony	EPA 200.8	ug/L	<0.50	0.50	CBATO	08/13/10	14:34
Arsenic	EPA 200.8	ug/L	<1.0	1.0	CBATO	08/13/10	14:34
Beryllium	EPA 200.8	ug/L	<0.10	0.10	CBATO	08/13/10	14:34
Cadmium	EPA 200.8	ug/L	<0.1	0.1	CBATO	08/13/10	14:34
Chromium	EPA 200.8	ug/L	<1.0	1.0	CBATO	08/13/10	14:34
Copper	EPA 200.8	ug/L	7.39	0.10	CBATO	08/13/10	14:34
Lead	EPA 200.8	ug/L	0.56	0.10	CBATO	08/13/10	14:34
Nickel	EPA 200.8	ug/L	0.98	0.50	CBATO	08/13/10	14:34
Selenium	EPA 200.8	ug/L	<0.50	0.50	CBATO	08/13/10	14:34
Silver	EPA 200.8	ug/L	<0.10	0.10	CBATO	08/13/10	14:34
Thallium	EPA 200.8	ug/L	<0.10	0.10	CBATO	08/13/10	14:34
Zinc	EPA 200.8	ug/L	27.6	1.0	CBATO	08/13/10	14:34

Notes
Report Limit is lowest concentration at which quantitation is demonstrated.

Authorization: Robin Parnell **Date:** 8/16/10

QUALITY ASSURANCE REPORT
Level 1

Project: Lawrenceville Wastewater Treatment Plant
Customer Sample ID: EFF Flume
Project Code: LA
Sample Point: FLU
Sample Date: 08/10/10

Analytical Run Information	Sb	As	Be	Cd	Cr	Cu	Pb	Ni	Se	Ag	Tl	Zn
Method	200.8	200.8	200.8	200.8	200.8	200.8	200.8	200.8	200.8	200.8	200.8	200.8
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Method Detection Limit (MDL)	0.016	0.03	0.011	0.009	0.06	0.012	0.014	0.07	0.03	0.015	0.014	0.55
Report Limit (RL)	0.5	1.0	0.10	0.1	1.0	0.10	0.10	0.50	0.50	0.10	0.10	1.0
Average LRB	0.139*	<0.03	0.011*	0.020	<0.06	0.012*	<0.014	<0.07	<0.03	0.019*	0.036*	<0.55
Total Metals	**Sb**	**As**	**Be**	**Cd**	**Cr**	**Cu**	**Pb**	**Ni**	**Se**	**Ag**	**Tl**	**Zn**
Sample ID: LA FLU												
Matrix Spike Conc.	2.0	10.0	0.5	0.5	10.0	25.0	10.0	10.0	10.0	10.0	0.5	50.0
MS Percent Recovery	99%	97%	91%	101%	96%	94%	98%	94%	93%	97%	97%	90%
MSD Percent Recovery	97%	96%	109%	100%	94%	91%	98%	91%	91%	95%	95%	87%
MS/MSD RPD	1	1	17	1	1	2	<1	3	3	1	2	2

LRB - Laboratory Reagent Blank
MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference
**Report Limit is lowest concentration at which quantitation is demonstrated. Values below Report Limit should not be used for compliance determinations due to a high degree of uncertainty.*

Validated By: _____ **Date:** 08/16/10

HRSD
Cleaning wastewater every day for a better Bay.

CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

CHAIN OF CUSTODY

PROJECT NAME/CODE: Lawrenceville WWTP (LA)

ANALYSES REQUESTED, CGN & NUMBER OF CONTAINERS

Project in Lims? Yes ____ No X

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	Metals (5)							HRSD Use Only: Presv'd Checked	HRSD Use Only: CONT. COUNT
LwWTP	(LA)	Eff Flume	8-10-10	1303	RM	(L) S	C (G)	1							✓	1
						L S	C G									
	LA	Flu				L S	C G									
						L S	C G									
						L S	C G									
						L S	C G									
						L S	C G									
						L S	C G									
						L S	C G									
						L S	C G									
						L S	C G									
						L S	C G									
						L S	C G									
						L S	C G									
						L S	C G									
						L S	C G									

COMMENTS:
Delivered via "CAPS" - CH11 8/11/10

For Ground Water Use Only
Temp. Blank 1 °C
Temp. Blank 2 °C

Relinquished by / Signature: Ronald Major	Date/Time: 8-10-10	1310
Received by / Signature: [signature]	Date/Time: 8/11/10	0957
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	

Temp. Requirement

Where required, submitted samples were transported in coolers maintained at ≤ 6 °C.

NA

Yes_____ No_____

Int_____

***Preservatives**

- *Hg, Metals (pH<2 - HNO3) (Clean metals check in section)
- *O&G (pH<2 - HCl, check in section) & store ≤ 6 °C
- CN^- (pH>12 - NaOH) & store ≤ 6 °C
- *Sulfide (pH>9 - NaOH+ZnAc) & store ≤ 6 °C
- *Micro ($Na_3S_2O_3$ + EDTA) & store < 10 °C
- *COD, NUT, Phenols (pH<2 - H_2SO_4) & store ≤ 6 °C
- *TOC (pH<2 - H_3PO_4) & store ≤ 6 °C
- *BOD, TSS, TVSS, Turbidity, Surfactant, Sulfate store ≤ 6 °C
- *NUT Non Acidified, Conductivity, Organics store ≤ 6 °C
- *Cr (VI) (pH 9.3 - 9.7 - $(NH_4)_2SO_4$) & store ≤ 6 °C

All sample(s) met proper *preservation requirements. Yes ✓ No_____ Int CH11

Sample Type: C=Composite, G=Grab Matrix: L= Liquid , S = Solid CGN: Container Group Number

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

HRSD
Cleaning wastewater every day for a better Bay.

1432 Air Rail Avenue, Virginia Beach, VA 23455-3002 • 757.460.4205 • Fax: 757.460.6586 • www.hrsd.com

01/25/12 - Lawrenceville STP - Permit Application - Revised - Method Change Letter attached

This analytical report contains 8 pages. The miscellaneous parameters method codes were revised to Lachat methods instead of the EPA method.

C.J. Dean
Town Manager
Town of Lawrenceville
400 N. Main Street
Lawrenceville, VA 23868

cjdean@lawrencevilleweb.com

cc: Robert Williams, Town of Lawrenceville wwtp@lawrencevilleweb.com

Date Sent: 02/17/12

HRSD CEL, Central Environmental Laboratory is VELAP/NELAC accredited by DCLS, the Division of Consolidated Laboratory Services.

VA Laboratory ID#: 460011
Effective Date: December 06, 2011
Expiration Date: June 14, 2012
Certificate # 1328

Analytical test results meet all requirements of VELAP/NELAC unless otherwise noted under the analysis.

Test results relate only to the sample tested. Clients should be aware that a critical step in chemical or microbiological analysis is the collection of the sample.

If you have any questions concerning this report, please do not hesitate to contact
Danny Barker, TSD Environmental Scientist at (757) 460-4247
dbarker@hrsd.com
Robin Parnell, CEL Laboratory Manager at (757) 460-4203.
rparnell@hrsd.com
Cindi Reno, CEL Administrative Assistant at (757) 460-4205.
creno@hrsd.com

Lawrenceville VPDES Field Sheet

Information To Be Checked Before The Start of Each Sampling Event

1. Does the Final Effluent have any abnormal characteristics (odor, color)? Y / (N)

   If the answer to the above questions is NO proceed to the next section. Please contact a supervisor if the answer is YES.

2. A. Average Plant flow for the last five days: 703,000 gal
   B. Expected Plant flow for the next 24 hours: 750,000 gal

3. List the last three days of Final Effluent TSS with the most recent last: NA, _____, _____

4. Contact Closure: (Expected Flow / 100 / 40) 188 Pulses per sample. 750,000 gal

5. Samplers for Final Effluent & FB calibrated at 400 ml per sample. (Desired volume/ 40) 16
   Final Effluent Start Time / Date: 1056 020712 Calibrated to: 400 mL
   FB Start Time / Date: 1056 020712 Calibrated to: 400 mL

The above information has been completed prior to the beginning of the sampling event. Int. MW

Sampling personnel: M. Wiggins, A. Keisel, _____

Information Check At The End Of The Sampling Event

1. Are all lids, compression assemblies and caps secure? (Y) / N
2. Final Effluent TSS for the sampling period: 5.0 mg/L
3. Plant flow for the sampling period 766.000 / 735,000 gal
4. Number of samples collected in each Final Effluent & FB composite container:
   Final Effluent: 39
   FB: 39
5. Final Effluent & FB composite end time and date:
   Final Effluent End Time / Date: 1056 020812
   FB End Time / Date: 1056 020812
6. Is Temperature in collection container at the end of sampling <6° C? (Y) / N
7. Are sample volumes equal in all composite containers? (Y) / N
8. Grab times and dates:
   FB VOA: NA
   Oil & Grease: 1037 020812
   Total Phenol: 1025 020812
   FNE VOA: 1026 020812
   Cyanide: 1025 020812

Sampling personnel: M. Wiggins, A. Keisel, _____

Please contact project lead with any problems incurred during the sampling event.

Record any other information that could affect sample results:

Cleaning wastewater every day for a better Bay.

1432 Air Rail Avenue, Virginia Beach, VA 23455-3002 • 757.460.4205 • Fax: 757.460.6586 • www.hrsd.com

CENTRAL ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Project: Lawrenceville Wastewater Treatment Plant - Permit Application
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FNE
Sample Date: 01/25/12

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Miscellaneous Parameters							
Ammonia-N w/Distillation	LACH 10-107-06-1-C	mg/L	0.68	0.20	GBROWN	02/01/12	11:06
Nitrate/Nitrite-Nitrogen (NOx)	LACH 10-107-04-1-A	mg/L	1.12	0.20	KSMITH	01/26/12	12:09
Cyanide	LACH 10-204-00-1-X	ug/L	<10	10	JRICKS	02/03/12	14:17
Total Kjeldahl Nitrogen	LACH 10-107-06-2-I	mg/L	1.5	0.50	VJOHNS	01/27/12	11:03
Total Phosphorous	LACH 10-115-01-1-E	mg/L	<0.20	0.20	GBROWN	01/26/12	11:25
Oil and Grease HEM	EPA 1664A	mg/L	<5.0	5.0	JRICKS	02/01/12	08:00
Total Dissolved Solids	SM 2540C	mg/L	219	1.0	TGAY	01/26/12	17:30
Total Phenol	LACH 10-210-00-1-B	mg/L	<0.05	0.05	JRICKS	02/03/12	09:56
Hardness (as $CaCO_3$)	SM 2340B	mg eq $CaCO_3$/L	36.7	0.2	SLABOC	01/31/12	09:55
Total Metals							
Chromium	EPA 200.8	ug/L	<1.0	1.0	KWILLI	01/30/12	12:06
Dissolved Metals							
Antimony	EPA 200.8	ug/L	<1.0	1.0	KWILLI	01/30/12	11:48
Arsenic	EPA 200.8	ug/L	<1.0	1.0	KWILLI	01/30/12	11:48
Beryllium	EPA 200.8	ug/L	<0.10	0.10	KWILLI	01/30/12	11:48
Cadmium	EPA 200.8	ug/L	<0.1	0.1	KWILLI	01/30/12	11:48
Chromium III (measured as Total Chromium)	Calculation	ug/L	<1.0	1.0			
Chromium VI (measured as Total Chromium)	Calculation	ug/L	<1.0	1.0			
Copper	EPA 200.8	ug/L	1.40	0.50	KWILLI	01/30/12	11:48
Lead	EPA 200.8	ug/L	<0.10	0.10	KWILLI	01/30/12	11:48
Mercury	EPA 245.1	ug/L	<0.10	0.10	SWILLI	01/31/12	09:01
Nickel	EPA 200.8	ug/L	<0.50	0.50	KWILLI	01/30/12	11:48
Selenium	EPA 200.8	ug/L	<0.50	0.50	KWILLI	01/30/12	11:48
Silver	EPA 200.8	ug/L	<0.10	0.10	KWILLI	01/30/12	11:48
Thallium	EPA 200.8	ug/L	<0.10	0.10	KWILLI	01/30/12	11:48
Zinc	EPA 200.8	ug/L	30.2	1.0	KWILLI	01/30/12	11:48

Notes:

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Cleaning wastewater every day for a better Bay.

1432 Air Rail Avenue, Virginia Beach, VA 23455-3002 • 757.460.4205 • Fax: 757.460.6586 • www.hrsd.com

CENTRAL ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Project: Lawrenceville Wastewater Treatment Plant - Permit Application
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FNE
Sample Date: 01/25/12

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Volatile Organics							
Acrolein	EPA 624	ug/L	<50.0	50.0	SLOPEZ	01/27/12	12:08
Acrylonitrile	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
Benzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
Bromoform	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
Carbon Tetrachloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
Chlorodibromomethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
Chloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
2-Chloro-ethylvinyl Ether	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
Chloroform	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
Dichlorobromomethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
1,2 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
1,3 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
1,4 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
1,1-Dichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
1,2-Dichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
1,1-Dichloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
1,2-trans-Dichloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
1,2-Dichloropropane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
1,3 Dichloropropylene (1,3-Dichloropropene)[2]	EPA 624	ug/L	<20.0	20.0	SLOPEZ	01/27/12	22:48
Ethylbenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
Methyl Bromide	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
Methyl Chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
Methylene Chloride (Dichloromethane)	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
Monochlorobenzene (Chlorobenzene)	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
1,1,2,2-Tetrachloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
Tetrachloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
Toluene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
1,1,1-Trichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
1,1,2-Trichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
Trichloroethylene (Trichloroethene)	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48
Vinyl Chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	01/27/12	22:48

Notes:

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

[2] *1,3-Dichloropropylene is the total of cis-1,3-Dichloropropylene and trans-1,3-Dichloropropylene.*

Cleaning wastewater every day for a better Bay.

1432 Air Rail Avenue, Virginia Beach, VA 23455-3002 • 757.460.4205 • Fax: 757.460.6586 • www.hrsd.com

CENTRAL ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Project: Lawrenceville Wastewater Treatment Plant - Permit Application
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FNE
Sample Date: 01/25/12

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Semi-Volatile Organics-Acid Extractables							
p-Chloro-m-cresol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
2-Chlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
2,4 Dichlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
2,4 Dimethylphenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
4,6-Dinitro-o-cresol (2-Methyl-4,6-dinitrophenol)	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
2,4-Dinitrophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
2-Nitrophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
4-Nitrophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Pentachlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Phenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
2,4,6 Trichlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Semi-Volatile Organics - Base Neutral Extractables							
Acenaphthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Acenapthylene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Anthracene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Benzidine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Benzo(a)anthracene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Benzo(a)pyrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Benzo(b)fluoranthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Benzo(k)fluoranthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Benzo(GHI)Perylene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Bis-(2-chloroethyl)-Ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Bis-(2-Chloroethoxy) Methane	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Bis-2-(Chloroisopropyl) Ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Bis-2-ethyl hexyl phthalate (Di-2-Ethylhexyl Phthlate)	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
4-Bromophenyl Phenyl Ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Butyl benzyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
2-Chloronaphthalene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
4-Chlorophenyl phenyl ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Chrysene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Dibenzo(a,h) anthracene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Dibutyl phthalate (Di-n-butyl phthalate)	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Di-n-octyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06

Notes:
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Cleaning wastewater every day for a better Bay.

1432 Air Rail Avenue, Virginia Beach, VA 23455-3002 • 757.460.4205 • Fax: 757.460.6586 • www.hrsd.com

CENTRAL ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Project: Lawrenceville Wastewater Treatment Plant - Permit Application
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FNE
Sample Date: 01/25/12

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
3,3-Dichlorobenzidine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Diethyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Dimethyl Phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
2,4-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
2,6-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
1,2-Diphenylhydrazine[2]	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Fluoranthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Fluorene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Hexachlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Hexachlorobutadiene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Hexachlorocyclopentadiene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Hexachloroethane	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Indeno(1,2,3-cd)pyrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Isophorone	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Naphthalene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Nitrobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
N-Nitrosodi-n-propyl amine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
N-Nitrosodimethylamine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
N-Nitrosodiphenylamine[3]	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Phenanthrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
Pyrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06
1,2,4 Trichlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	02/02/12	16:06

Notes:

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

[2] *1,2-Diphenylhydrazine gets converted to Azobenzene in the extraction process.*

[3] *N-Nitrosodiphenylamine decomposes in the injection port to Diphenylamine.*

Authorization: Robin Parnell
Lab Manager/QA Manager

Revised Date: 2/17/12
Miscellaneous Parameter method codes were changed from EPA to Lachat Reference Methods.

CENTRAL ENVIRONMENTAL LABORATORY
QUALITY ASSURANCE REPORT
Level 1

Project: Lawrenceville STP - Semi-Annual Metals
Customer Sample ID: Final Effluent
Project Code: LA
Sample Point: FB; FNE
Sample Date: 01/25/12

Analytical Run Information	Sb	As	Be	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Tl	Zn
Method	200.8	200.8	200.8	200.8	200.8	200.8	200.8	245.1	200.8	200.8	200.8	200.8	200.8
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Limit of Detection (LOD)	0.22	0.06	0.01	0.050	0.04	0.09	0.01	0.03	0.08	0.12	0.05	0.03	0.24
Limit of Quantitation (LOQ)	1.0	1.00	0.10	0.100	1.0	0.50	0.10	0.10	0.50	0.50	0.10	0.10	1.0
Method Blank (MB)	<0.22	<0.06	<0.01	<0.050	<0.04	<0.09	<0.01	<0.03	<0.08	<0.12	<0.05	<0.03	<0.24
Dissolved Metals	**Sb**	**As**	**Be**	**Cd**		**Cu**	**Pb**	**Hg**	**Ni**	**Se**	**Ag**	**Tl**	**Zn**
Sample ID: LA FNE													
Matrix Spike Conc.	5.0	5.0	0.5	0.5		2.5	0.5	1.0	2.5	2.5	0.5	0.5	25.0
MS Percent Recovery	100%	102%	92%	94%		94%	97%	104%	93%	104%	89%	96%	102%
MSD Percent Recovery	98%	98%	89%	88%		84%	93%	105%	87%	102%	86%	94%	92%
MS/MSD RPD	3	4	2	6		7	3	<1	6	102	4	2	5
Total Metals					**Cr**								
Sample ID: LA FNE													
Matrix Spike Conc.					5.0								
MS Percent Recovery					95%								
MSD Percent Recovery					93%								
MS/MSD RPD					3								

MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference
*Report Limit is lowest concentration at which quantitation is demonstrated. Values below report limit should not be used for compliance determinations due to a high degree of uncertainty.

Validated By: _____ Date: 02/14/12

HRSD
Cleaning wastewater every day for a better Bay.

CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

CHAIN OF CUSTODY

PROJECT NAME/CODE: LA VPDES 2A

ANALYSES REQUESTED, CGN & NUMBER OF CONTAINERS

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	TOTAL METALS (5)	DISSOLVED METALS (5S)	Semi Vol (9-9B)	Semi Vol (9-9H)	Nutrients Presd (7)	Nutrients Unpresvd (17)	Ammonia (7)	Solids (1)	VOA (10-10B)	VOA (10-10E)	Total Phenol (3)	Oil & Grease (8-3C)	Cyanide (4)			Project in Lims? Yes ___ No ✓ HRSD Use Only: Presv'd Checked	CONT. COUNT
Field Blank	LA	FB	1/25/2012	1056	MW	L	C	1	1														✓	2
Final Effluent	LA	FNE	1/25/2012	1056	MW	L	C	1	1		9	1	1	1	1								✓	15
Final Effluent	LA	FNE	1/25/2012	1030	MW	L	G										6						✓	6
Final Effluent	LA	FNE	1/25/2012	1035	MW	L	G											1					✓	1
Final Effluent	LA	FNE	1/25/2012	1045	MW	L	G												4				✓	4
Final Effluent	LA	FNE	1/25/2012	1035	MW	L	G													1			✓	1

COMMENTS:

For Ground Water Use Only
Temp. Blank 1 - _____ °C
Temp. Blank 2 - _____ °C

Relinquished by / Signature	Date/Time 01/25/12 1505
Received by / Signature	Date/Time 1/25/12 1505
Relinquished by / Signature	Date/Time
Received by / Signature	Date/Time
Relinquished by / Signature	Date/Time
Received by / Signature	Date/Time
Relinquished by / Signature	Date/Time
Received by / Signature	Date/Time

Temp. Requirement

Where required, submitted samples were transported in coolers maintained at ≤ 6 °C.

Yes ✓ No ____

Int MW

***Preservatives**

- *Hg, Metals (pH<2 - HNO3) (Clean metals check in section)
- *O&G (pH<2 - HCl, check in section) & store ≤ 6 °C
- CN^- (pH>12 - NaOH) & store ≤ 6 °C
- *Sulfide (pH>9 - NaOH+ZnAc) & store ≤ 6 °C
- *Micro ($Na_2S_2O_3$ + EDTA) & store < 10 °C
- *COD, NUT, Phenols (pH<2 - H_2SO_4) & store ≤ 6 °C
- *TOC (pH<2 - H_3PO_4) & store ≤ 6 °C
- *BOD, TSS, TVSS, Turbidity, Surfactant, Sulfate store ≤ 6 °C
- *NUT Non Acidified, Conductivity, Organics store ≤ 6 °C
- *Cr (VI) (pH 9.3 - 9.7 - $(NH_4)_2SO_4$) & store ≤ 6 °C

All sample(s) met proper *preservation requirements. Yes ✓ No ____ Int CH

Sample Type: C=Composite, G=Grab Matrix: L= Liquid , S = Solid CGN: Container Group Number

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

FIELD RECORD (S)

SUBCONTRACTED DATA

Virginia Institute of Marine Science
Department of Environmental and Aquatic Animal Health
Route 1208 Greate Road
Gloucester Point VA 23062
804-684-7654

ANALYTICAL REPORT

Project Code: LA
Sample Point: FNE
Sample Date: 09/01/10

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
TBT	Unger	ng/L	<30	30	ET	09/28/10	9:19

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: Ellen Travelstead Ellen Travelstead **Date:** 09/28/2010

ATTACHMENT D

OLVER INCORPORATED *Consulting Engineers and Applied Scientists*

September 5, 2008

Mr. Robert Williams, Jr.
Lawrenceville Water Treatment Plant
380 Meadow Lane
Lawrenceville, VA 23868

Re: Annual Whole Effluent Toxicity (WET) Testing Results;
Olver Project Number: 61048

Dear Mr. Williams:

Enclosed are three copies of the report which describes the performance and the results of the first annual chronic toxicity testing performed by Olver Incorporated for the Lawrenceville Wastewater Treatment Plant. Testing consisted of a 3-brood chronic *Ceriodaphnia* survival and reproduction test using 24-hour composite effluent samples from Outfall 001.

The results of this testing showed that the effluent exhibited no chronic toxicity. The toxicity end-points for all tests are summarized as follows:

Testing Dates	Testing Performed	Toxicity End-Point (% Effluent)	
		NOEC	TU_c (100/NOEC)
8/19/08 – 8/26/08	3-Brood *Ceriodaphnia* Chronic	100%	1.0

I have provided for your review three copies of each report, two copies of which must be submitted to the DEQ. The next annual testing event should be conducted prior to September 11, 2009.

As always, should you have any questions regarding these or other matters, please do not hesitate to contact me.

Sincerely,

OLVER INCORPORATED

R. Lawrence Hoffman
Bioassay Manager/
Director of Environmental Services

RLH/mlc
Enclosures

1116 South Main Street
Blacksburg, VA 24060

Phone: (540) 552-5548
Fax: (540) 552-5577
www.olver.com

ANNUAL
CHRONIC TOXICITY TESTING

LAWRENCEVILLE WASTEWATER TREATMENT PLANT
VPDES PERMIT NO.: VA0020354
LAWRENCEVILLE, VIRGINIA
AUGUST 19 - AUGUST 26, 2008

Prepared for:

Mr. Robert Williams, Jr.
Lawrenceville Wastewater Treatment Plant
380 Meadow Lane
Lawrenceville, Virginia 23868

OLVER
INCORPORATED

Prepared by:

Olver Incorporated
1116 South Main Street
Blacksburg, Virginia 24060

Bioassay Report No.:
B0808010

Olver Project Number: 61048

September 4, 2008

QUALITY ASSURANCE STATEMENT

The information provided within this report was generated in accordance with the referenced EPA methods and /or specified NPDES Permit requirements. A final review of all data and records indicates the report submitted is an accurate reflection of the study conducted. Any areas of non-compliance are documented in the study records. No deviations existed that affected the validity of the test data.

Reviewed and Approved
for Issue by:

R Lawrence Hoffman 9/4/08

R. Lawrence Hoffman — Date
Director of Environmental Services
Bioassay Manager

OLVER
INCORPORATED

SECTION 3.0

RESULTS

All data generated during testing are contained in Appendices 5. The results of the chronic test showed that the effluent from Outfall 001 did not significantly affect *Ceriodaphnia* survival or growth in any of the effluent test concentrations.

The median lethal concentration (LC_{50}), NOEC, Chronic Toxicity Units (TU_c), and 25th percentile inhibition concentration (IC_{25}) values for these tests are as follows:

Ceriodaphnia Chronic Test - Survival	NOEC = 100% effluent 48-Hour LC_{50} >100% effluent
Ceriodaphnia Chronic Test - Reproduction	NOEC = 100% effluent IC_{25} > 100% effluent TU_c = 1.0

TOXICITY TEST DATA SUMMARY SHEET

Client/Facility: Lawrenceville Wastewater Treatment Plant

Toxicant/Effluent: 001 | **NPDES Permit No.:** VA0020354 | **Job No.:** 61048

ACUTE TOXICITY TEST RESULTS		
EPA-821-R-02-012	*C. dubia*	*P. promelas*
Test Date(s):		
Test Conditions:		
Test Organism Age	**< 24 hours**	
Dilution Water:	EPA MHW	EPA MHW
Source:	Olver Inc.	Olver Inc.
Aeration:	Continuous	Continuous
Test Acceptability:		
Control Survival (≥ 90%)		
Survival in 100%		
No. of Replicates		
No of Organisms/Replicate		
Statistical Analyses Results:		
48-Hour LC_{50}		
95% Confidence Interval		
LC_{50} Method		
TU_a (= 100/LC_{50})		
NOAEC (If required)		
Normal Distribution?	--	--
Homogeneous Variance?	--	--
NOAEC Method	--	--

CHRONIC TOXICITY TEST RESULTS		
EPA-821-R-02-013	*C. dubia*	*P. promelas*
Test Date(s):	**8/19 – 8/26/08**	
Test Conditions:		
Test Organism Age	**6 – 10 hrs**	
Dilution Water:	EPA MHW	EPA MHW
Source:	Olver Inc.	Olver Inc.
Aeration:	Continuous	Continuous
Test Acceptability:		
Control Survival (≥ 80%)	**100%**	
No. of Control Females	**10**	
% Control Females 3 Broods (≥ 60%)	**100%**	
Avg. No. of Young/Surviving Female (≥ 15)	**20.0**	
Average Weight/Surviving Control (≥ 0.25 mg):		
Survival in Highest (100%) Concentration	**100%**	
Number of Replicates	**10**	**10**
No. of Organisms/Replicate	**1**	
Statistical Analyses Results:		
Normal Distribution? (Yes/No)	**Yes**	S: G:
Homogeneous Variance? (Yes/No)	**Yes**	S: G:
NOEC Method	**Dunnett's**	S/G:
NOEC: Survival	**100%**	
48-Hour LC_{50}	**>100%**	
TU_c: Survival (= 100/NOEC)	**1.0**	
NOEC: Reproduction/Growth	**100%**	
TU_c: Reproduction/Growth (= 100/NOEC)	**1.0**	
IC_{25}: Reproduction/Growth	**>100%**	
Upper Percent MSD*: Reproduction (≤ 47%)	**29.8%**	
Upper Percent MSD*: Growth (≤ 30%)		

Comments/Notes:

N/A = Not Applicable

*MSD was calculated using Dunnett's Test (or Bonferroni t-Test).

OLVER INCORPORATED *Consulting Engineers and Applied Scientists*

August 26, 2009

Mr. Robert Williams, Jr.
Lawrenceville Water Treatment Plant
380 Meadow Lane
Lawrenceville, VA 23868

Re: Annual Whole Effluent Toxicity (WET) Testing Results; Olver Project Number: 61048

Dear Mr. Williams:

Enclosed are three copies of the report which describes the performance and the results of the annual chronic toxicity testing performed for the Lawrenceville Wastewater Treatment Plant. Testing consisted of a 3-brood chronic *Ceriodaphnia* survival and reproduction test using 24-hour composite effluent samples from Outfall 001. As we discussed, toxicity testing services provided previously by Olver Incorporated are now being subcontracted to Coastal Bioanalysts, Incorporated. The enclosed report includes results summary pages, raw data, statistical analyses, and chain of custody documentation. Olver Incorporated has reviewed the report and approved the test methods and results.

The results of this testing showed that the effluent did not exhibit any chronic toxicity. The toxicity end-points for the chronic *Ceriodaphnia* test are summarized as follows:

Testing Dates	Testing Performed	Toxicity End-Point (% Effluent)	
		NOEC	TU_c (100/NOEC)
8/11/09 -8/17/09	3-Brood *Ceriodaphnia* Chronic	100%	1.0

NOEC: No Observed Effect Concentration. TU_c: Chronic Toxicity Unit = 100 / NOEC.

I have provided for your review three copies of each report, two copies of which must be submitted to the DEQ. The next annual testing event should consist of both a three-brood chronic *Ceriodaphnia* survival and reproduction test and a seven-day chronic fathead minnow test to be conducted prior to September 11, 2010.

We remain available to discuss the test results or report at your convenience. As always, please do not hesitate to contact me should you have any questions, comments, or additional needs.

Sincerely,

OLVER INCORPORATED

R. Lawrence Hoffman
Bioassay Manager/
Director of Environmental Services

RLH/mlc
Enclosures
cc: Amy Alexander, Olver Incorporated (w/o enclosures)

1116 South Main Street
Blacksburg, VA 24060

Phone: (540) 552-5548
Fax: (540) 552-5577
www.olver.com

Client: Olver, Inc.
Project ID: OLVR0917
Client Sample ID: Lawrenceville WWTP Outfall 001
Permit No: VA0020354
Sample Period: 8/10/09-8/13/09

Coastal Bioanalysts, Inc

Report of Analysis: Whole Effluent Toxicity (WET)

Submitted To:	Prepared By:
Ms. Amy Alexander Olver, Inc. 1116 South Main Street Blacksburg, VA 24060	Coastal Bioanalysts, Inc. 6400 Enterprise Court Gloucester, VA 23061 (804) 694-8285 www.coastalbio.com Contact: Peter F. De Lisle, Technical Director

Chronic Test Results*

Species-Test Method	Endpoint	NOEC	LOEC	ChrV	PMSD	$T.U._C$	IC25	48-h LC50	LC50 95% C.L.	$T.U._{Ac}$
C. dubia EPA 1002.0	Survival	100	>100	>100	N/A	1.00	N/A	>100	N/A	<1.00
	Reproduction	100	>100	>100	21	1.00	>100	N/A	N/A	N/A

*Note: Details regarding test conduct and data analysis provided in attached bench sheets and printouts as applicable.

Chronic Test Biological Summary Data		Sample Concentration (%)					
Species-Method	Endpoint	Control	33.0	44.0	58.0	76.0	100
C. dubia EPA 1002.0	Survival (%):	90	100	100	100	100	100
	Repro (# young):	28.2	23.0	24.1	22.8	26.7	26.8

Test Information Species-Method	Start Date/Time End Date/Time	Organism Source	Hatch/Harvest Date/Time	Acclimation Temp.	Acclimation Water	Test Aerated?
C. dubia EPA 1002.0	8/11/09 1410 8/17/09 1525	CBI Stock	8/10/09 1730 8/10/09 2200	25° C	Mod. Hard Syn. FW	No

Sample/Dilution Water Data	Chronic Test			
	Sample		Dilution Water*	
Water Quality Parameter (Units)	Mean	Std. Dev.	Mean	Std. Dev.
Arrival Temperature (°C)	3	0.6	N/A	N/A
Use Temperature (°C)	25	0.4	25	0.4
Conductivity (µS/cm)	352	5.5	296	3.4
pH (S.U.)	8.03	0.05	7.84	0.06
Dissolved Oxygen (mg/l)	8.2	0	8.2	0
Total Hardness (mg/l as $CaCO_3$)	41	3.1	99	1.0
Alkalinity (mg/l as $CaCO_3$)	69	1.5	59	1.5
Total Residual Chlorine (mg/l)	<Q.L.	0	N/A	N/A
Ammonia (mg/l NH_3-N)	0.8	0.6	N/A	N/A

*Dilution water = Moderately hard synthetic freshwater

EPA Laboratory ID: VA01116

Client: Olver, Inc.
Project ID: OLVR0917
Client Sample ID: Lawrenceville WWTP Outfall 001
Permit No: VA0020354
Sample Period: 8/10/09-8/13/09

Coastal Bioanalysts, Inc.

Sample Aging/Use/Pretreatment				
CBI Sample I.D.	Collection Date/Time	Date(s)/Time(s) 1st Used in Tests	Date(s)/Time(s) Used in Renewals	Sample Adjustments
OLVR0917-A	8/10/09 1200	8/11/09 1410	N/A	Aerated 3 min
OLVR0917-B	8/11/09 1200	8/12/09 1425	8/13/09 1600	Aerated 2 min
OLVR0903-C	8/13/09 1200	8/14/09 1540	8/15/09 1415 8/16/09 1300	Aerated 2.5 min

Chronic Test Water Quality (Mean/Std. Dev.)						
Test:	*C. dubia* 1002.0					
% Conc:	Cont.	33.0	44.0	58.0	76.0	100
Temp. (°C)	25 0.4	25 0.4	25 0.4	25 0.4	25 0.4	25 0.4
D.O. (mg/l)	8.0 0.3	8.0 0.3	7.9 0.3	8.0 0.3	7.9 0.3	7.9 0.3
pH (S.U.)	7.74 0.09	7.79 0.08	7.83 0.08	7.84 0.08	7.85 0.09	7.84 0.10
Cond. (µS/cm)	295 4.0	316 3.8	325 1.4	333 1.4	342 2.7	354 3.6

Chronic Test QA/QC Reference Toxicant: KCl Units: mg/l Test Organism Source: CBI Stock Cultures									
Species-Method (Ref. Test Date)	Data Source	% Survival		Reproduction (# Young)					RTT in Control?
		Cont.	NOEC	Cont.	NOEC	PMSD	IC25	IC25 A.L.	
C. dubia 1002.0 (8/5/09-8/11/09)	RTT	100	500	25.1	250	24	266	N/A	Yes
	CC	97	500	22.3	250	31	308	219-397	

Note: RTT = Reference Toxicant Test, CC = Control Chart, Cont. = Control group.

The results of analysis contained within this report relate only to the sample as received in the laboratory. This report shall not be reproduced except in full without written approval from the laboratory.

APPROVED:

Peter F. De Lisle, Ph.D.
Technical Director

8/20/09
Date

GLOSSARY OF TERMS AND ABBREVIATIONS

A.L. (Acceptance Limits): The results of a given reference toxicant test are compared to the control chart mean value ± 2 standard deviations. These limits approximate the 95% probability limits for the "true" reference toxicant value.

Chronic Value (ChrV): The geometric mean of the NOEC and LOEC. Units are same as test concentration units.

C.L. (Confidence Limits): These are the probability limits, based on the data set and statistical model employed, that the "true value" lies within the limits specified. Typically limits are based on 95% or 99% probabilities.

Control chart: A cumulative summary chart of results from QC tests with reference toxicants. The results of a given reference toxicant test are compared to the control chart mean value and 95% Acceptance Limits (A.L.) (mean ± 2 standard deviations).

OLVER INCORPORATED

A CHA Company

FILE

August 13, 2010

Mr. Robert Williams, Jr.
Lawrenceville Water Treatment Plant
380 Meadow Lane
Lawrenceville, VA 23868

Re: Annual Whole Effluent Toxicity (WET) Testing Results; Olver/CHA Project Number: 61048/22051

Dear Mr. Williams:

Enclosed are three copies of the report which describes the performance and the results of the annual chronic toxicity testing performed for the Lawrenceville Wastewater Treatment Plant. Testing consisted of a 3-brood chronic *Ceriodaphnia* survival and reproduction test using 24-hour composite effluent samples from Outfall 001. The enclosed report provided by Coastal Bioanalysts includes results summary pages, raw data, statistical analyses, and chain of custody documentation. Olver Incorporated has reviewed the report and approved the test methods and results.

The results of this testing showed that the effluent did not exhibit any chronic toxicity. The toxicity end-points for the chronic *Ceriodaphnia* test are summarized as follows:

Testing Dates	Testing Performed	Toxicity End-Point (% Effluent)	
		NOEC	TU_c (100/NOEC)
8/3/2010 – 8/9/2010	3-Brood *Ceriodaphnia* Chronic	100%	1.0

NOEC: No Observed Effect Concentration. TU_c: Chronic Toxicity Unit = 100 / NOEC.

I have provided for your review three copies of each report, two copies of which must be submitted to the DEQ by September 11, 2010. The next annual three-brood chronic *Ceriodaphnia* survival and reproduction test will need to be conducted prior to September 11, 2011. On September 11, 2011 your permit WET limit of 1.9 TU_c becomes effective, after which a seven-day chronic fathead minnow test will need to be conducted and the results submitted to DEQ by November 10, 2010.

We remain available to discuss the test results or report at your convenience. As always, please do not hesitate to contact me or Amy Alexander should you have any questions, comments, or additional needs.

Very truly yours,

R Lawrence Hoffman

R. Lawrence Hoffman
Director of Technical Services-Environmental/Planning

RLH/mlc
Enclosures
cc: Amy Alexander, Olver – A CHA Company (w/o enclosures)

Client: Olver, Inc.
Project ID: OLVR1041
Client Sample ID: Lawrenceville WWTP Outfall 001
Permit No: VA0020354
Sample Period: 8/2/10-8/5/10

C B 1

Coastal Bioanalysts, Inc.

Report of Analysis: Whole Effluent Toxicity (WET)

Submitted To:	**Prepared By:**
Ms. Amy Alexander Olver, Inc. 1116 South Main Street Blacksburg, VA 24060	Coastal Bioanalysts, Inc. 6400 Enterprise Court Gloucester, VA 23061 (804) 694-8285 www.coastalbio.com Contact: Peter F. De Lisle, Technical Director

Chronic Test Results*

Species-Test Method	Endpoint	NOEC	LOEC	ChrV	PMSD	$T.U._C$	IC25	48-h LC50	LC50 95% C.L.	$T.U._{Ac}$
C. dubia EPA 1002.0	Survival	100	>100	>100	N/A	1.00	N/A	>100	N/A	<1.00
	Reproduction	100	>100	>100	45	1.00	92.5	N/A	N/A	N/A

*Details regarding test conduct and data analysis provided in attached bench sheets and printouts as applicable.

Chronic Test Biological Summary Data		Sample Concentration (%)					
Species-Method	Endpoint	Control	33.0	44.0	58.0	76.0	100
C. dubia EPA 1002.0	Survival (%):	90	100	90	100	90	60
	Repro (# young):	17.7	16.8	15.4	19.8	16.5	11.8

Test Information Species-Method	Start Date/Time End Date/Time	Organism Source	Hatch/Harvest Date/Time	Acclimation Temp.	Acclimation Water	Test Aerated?
C. dubia EPA 1002.0	8/3/10 1440 8/9/10 1630	CBI Stock	8/2/10 1650 8/2/10 2055	25° C	Mod. Hard Syn. FW	No

Sample/Dilution Water Data	Chronic Test			
	Sample		Dilution Water*	
Water Quality Parameter (Units)	Mean	Std. Dev.	Mean	Std. Dev.
Arrival Temperature (°C)	2	1.7	N/A	N/A
Use Temperature (°C)	25	0.4	25	0
Conductivity (µS/cm)	389	23	303	5.3
pH (S.U.)	8.01	0.07	7.86	0.09
Dissolved Oxygen (mg/l)	8.2	0	8.2	0
Total Hardness (mg/l as $CaCO_3$)	46	3.5	91	3.9
Alkalinity (mg/l as $CaCO_3$)	73	1.0	60	1.1
Total Residual Chlorine (mg/l)	<Q.L.	0	N/A	N/A
Ammonia (mg/l NH_3-N)	<1.0	0	N/A	N/A

*Dilution water = Moderately hard synthetic freshwater

Sample Aging/Use/Pretreatment

CBI Sample I.D.	Collection Date/Time	Date(s)/Time(s) 1st Used in Tests	Date(s)/Time(s) Used in Renewals	Sample Adjustments
OLVR1041-A	8/2/10 1200	8/3/10 1440	N/A	Aerated 3 min
OLVR1041-B	8/3/10 1200	8/4/10 1435	8/5/10 1535	Aerated 2.5 min
OLVR1041-C	8/5/10 1200	8/6/10 1505	8/7/10 1640 8/8/10 1635	Aerated 3 min

VELAP# 460030
EPA# VA01116

Client: Olver, Inc.
Project ID: OLVR1041
Client Sample ID: Lawrenceville WWTP Outfall 001
Permit No: VA0020354
Sample Period: 8/2/10-8/5/10

C B I
Coastal Bioanalysts, Inc.

Chronic Test Water Quality (Mean/Std. Dev.)						
Test:	*C. dubia* 1002.0					
% Conc:	Cont.	33.0	44.0	58.0	76.0	100
Temp. (°C)	25 0.4	25 0.4	25 0.4	25 0.4	25 0.4	25 0.4
D.O. (mg/l)	7.8 0.4	7.8 0.4	7.8 0.4	7.8 0.4	7.8 0.4	7.8 0.4
pH (S.U.)	7.75 0.09	7.80 0.07	7.82 0.07	7.84 0.06	7.85 0.06	7.90 0.07
Cond. (µS/cm)	298 6.6	324 3.8	332 3.4	343 4.2	353 4.5	372 5.1

Chronic Test QA/QC Reference Toxicant: KCl Units: mg/l Test Organism Source: CBI Stock Cultures									
Species-Method (Ref. Test Date)	Data Source	% Survival		Reproduction (# Young)					RTT in Control?
		Cont.	NOEC	Cont.	NOEC	PMSD	IC25	IC25 A.L.	
C. dubia 1002.0	RTT	100	250	19.8	250	33	323	N/A	Yes
(8/1/10-8/7/10)	CC	97	500	23.6	250	27	305	213-397	

Note: RTT = Reference Toxicant Test, CC = Control Chart, Cont. = Control group.

The results of analysis contained within this report relate only to the sample as received in the laboratory. This report shall not be reproduced except in full without written approval from the laboratory. Unless noted below, these test results meet all requirements of NELAP.

APPROVED:

Peter F. De Lisle, Ph.D.
Technical Director

8/12/10
Date

Deviations from, additions to, or exclusions from the test method, non-standard conditions or data qualifiers and, as appropriate, a statement of compliance/non-compliance: NONE

GLOSSARY OF TERMS AND ABBREVIATIONS

A.L. (Acceptance Limits): The results of a given reference toxicant test are compared to the control chart mean value ± 2 standard deviations. These limits approximate the 95% probability limits for the "true" reference toxicant value.

Chronic Value (ChrV): The geometric mean of the NOEC and LOEC. Units are same as test concentration units.

C.L. (Confidence Limits): These are the probability limits, based on the data set and statistical model employed, that the "true value" lies within the limits specified. Typically limits are based on 95% or 99% probabilities.

Control chart: A cumulative summary chart of results from QC tests with reference toxicants. The results of a given reference toxicant test are compared to the control chart mean value and 95% Acceptance Limits (A.L.) (mean ± 2 standard deviations).

IC25: The concentration of sample or chemical, calculated from the data set using statistical models, causing a 25% reduction in test organism growth, reproduction, etc. The lower the IC25, the more toxic the chemical or sample. Units are same as test concentration units.

LC50: The concentration of sample or chemical, calculated from the data set using statistical models, causing a 50% reduction in test organism survival. The lower the LC50, the more toxic the chemical or sample. Units are same as test concentration units. Note: The LC50 value must always be associated with the duration of exposure. Thus 48-h LC50, 96-h LC50, etc. are calculated.

VELAP# 460030
EPA# VA01116

August 30, 2011

Mr. Robert Williams, Jr.
Lawrenceville Water Treatment Plant
380 Meadow Lane
Lawrenceville, VA 23868

Re: Annual Whole Effluent Toxicity (WET) Testing Results; CHA Project Number: 22051

Dear Mr. Williams:

Enclosed are three copies of the report which describes the performance and the results of the annual chronic toxicity testing performed for the Lawrenceville Wastewater Treatment Plant. Testing consisted of a 3-brood chronic *Ceriodaphnia* survival and reproduction test using 24-hour composite effluent samples from Outfall 001. The enclosed report provided by Coastal Bioanalysts includes results summary pages, raw data, statistical analyses, and chain of custody documentation. CHA Consulting, Inc. has reviewed the report and approved the test methods and results.

The results of this testing indicate that the effluent exhibited chronic toxicity to the *Ceriodaphnia*; although exposure to the effluent did not significantly impact survival, survival reproduction was statistically reduced in all test concentrations. The toxicity end-points for the chronic *Ceriodaphnia* test are summarized as follows:

Testing Dates	Testing Performed	Toxicity End-Point (% Effluent)	
		NOEC	TU_c (100/NOEC)
8/9/2010 – 8/15/2011	3-Brood *Ceriodaphnia* Chronic	<33%	>3.03

NOEC: No Observed Effect Concentration. TU_c: Chronic Toxicity Unit = 100 / NOEC.

I have provided for your review three copies of each report, two copies of which must be submitted to the DEQ by September 11, 2011. On September 11, 2011 your permit WET limit of 1.9 TU_c and a quarterly testing requirement become effective. The first seven-day chronic fathead minnow test will need to be conducted and the results submitted to DEQ by November 10, 2011. For the purpose of completing the VPDES Permit Reissuance Application a total of four seven-day chronic fathead minnow tests will need to be conducted prior to the March 11, 2012 Form 2A submittal deadline.

We remain available to discuss the test results or report at your convenience. As always, please do not hesitate to contact me or Ashley Ruble should you have any questions, comments, or additional needs.

Very truly yours,

R. Lawrence Hoffman
Vice President

RLH/mlc
Enclosures
cc: Ashley Ruble, CHA Consulting (w/o enclosures)

1116 South Main Street, Blacksburg, VA 24060-5548
T 540.552.5548 • F 540.552.5577 • www.chacompanies.com

Client: Olver, Inc.
Project ID: OLVR1137
Client Sample ID: Lawrenceville WWTP outfall 001
Permit No: VA0020354
Sample Period: 8/8/11to 8/11/11 NTP 22051.1001.44000

Coastal Bioanalysts, Inc.

Report of Analysis: Whole Effluent Toxicity (WET)

Submitted To:	**Prepared By:**
Ms. Ashley Ruble Olver, Inc. 1116 South Main Street Blacksburg, VA 24060	Coastal Bioanalysts, Inc. 6400 Enterprise Court Gloucester, VA 23061 (804) 694-8285 www.coastalbio.com Contact: Peter F. De Lisle, Technical Director

Chronic Test Results*

Species-Test Method	Endpoint	NOEC	LOEC	ChrV	PMSD	T.U.$_C$	IC25	48-h LC50	LC50 95% C.L.	T.U.$_{Ac}$
C. dubia	Survival	100	>100	>100	N/A	1.00	N/A	>100	N/A	<1.00
EPA 1002.0	Reproduction	<33	33	<33	28	>3.03	12.9	N/A	N/A	N/A

*Note: Details regarding test conduct and data analysis provided in attached bench sheets and printouts as applicable.

Chronic Test Biological Summary Data		Sample Concentration (%)					
Species-Method	Endpoint	Control	33.0	44.0	68.0	76.0	100
C. dubia EPA 1002.0	Survival (%):	90	70	90	80	100	100
	Repro (# young):	24.1	7.2	10.2	5.0	11.9	8.5

Test Information Species-Method	Start Date/Time End Date/Time	Organism Source	Hatch/Harvest Date/Time	Acclimation Temp.	Acclimation Water	Test Aerated?
C. dubia	8/9/11 1305	CBI	8/8/11 2200		Mod. Hard	
EPA 1002.0	8/15/11 0815	Stock	8/9/11 0600	25° C	Syn. FW	No

Sample/Dilution Water Data	Chronic Test			
	Sample		Dilution Water*	
Water Quality Parameter (Units)	Mean	Std. Dev.	Mean	Std. Dev.
Arrival Temperature (°C)	1	0	N/A	N/A
Use Temperature (°C)	25	0	25	0
Conductivity (µS/cm)	366	4.2	295	2.4
pH (S.U.)	7.70	0.06	7.65	0.04
Dissolved Oxygen (mg/l)	8.2	0	8.2	0
Total Hardness (mg/l as $CaCO_3$)	47	5.0	99	1.0
Alkalinity (mg/l as $CaCO_3$)	68	1.5	59	2.4
Total Residual Chlorine (mg/l)	<Q.L.	0	N/A	N/A
Ammonia (mg/l NH_3-N)	<1.0	0	N/A	N/A

*Dilution water = Moderately hard synthetic freshwater

Sample Aging/Use/Pretreatment

CBI Sample I.D.	Collection Date/Time	Date(s)/Time(s) 1st Used in Tests	Date(s)/Time(s) Used in Renewals	Sample Adjustments
OLVR1137-A	8/8/11 1200	8/9/11 1305	N/A	Aerated 3 min
OLVR1137-B	8/9/11 1200	8/10/11 1345	8/11/11 1400	Aerated 2-3 min
OLVR1137-C	8/11/11 1200	8/12/11 1350	8/13/11 1410 8/14/11 1435	Aerated 2 min

VELAP# 460030
EPA# VA01116

Client: Olver, Inc.
Project ID: OLVR1137
Client Sample ID: Lawrenceville WWTP outfall 001
Permit No: VA0020354
Sample Period: 8/8/11to 8/11/11 NTP 22051.1001.44000

Coastal Bioanalysts, Inc.

Chronic Test Water Quality (Mean/Std. Dev.)						
Test:	*C. dubia* 1002.0					
% Conc:	**Cont.**	**33.0**	**44.0**	**68.0**	**76.0**	**100**
Temp.	25	25	25	25	25	25
(°C)	0	0	0	0	0	0
D.O.	8.2	8.3	8.3	8.3	8.4	8.4
(mg/l)	0.1	0.1	0.2	0.2	0.2	0.2
pH	7.65	7.79	7.81	7.80	7.81	7.82
(S.U.)	0.09	0.20	0.22	0.19	0.20	0.20
Cond.	295	321	330	341	355	371
(µS/cm)	6.0	4.5	2.8	3.5	4.7	4.3

Chronic Test QA/QC Reference Toxicant: KCl Units: mg/l Test Organism Source: CBI Stock Cultures									
Species-Method	**Data**	**% Survival**		**Reproduction (# Young)**					**RTT in**
(Ref. Test Date)	**Source**	**Cont.**	**NOEC**	**Cont.**	**NOEC**	**PMSD**	**IC25**	**IC25 A.L.**	**Control?**
C. dubia 1002.0	RTT	100	125	31.9	125	14	266	N/A	Yes
(8/1/11-8/7/11)	CC	99	500	24.4	250	25	318	240-396	

Note: RTT = Reference Toxicant Test, CC = Control Chart, Cont. = Control group.

The results of analysis contained within this report relate only to the sample as received in the laboratory. This report shall not be reproduced except in full without written approval from the laboratory. Unless noted below, these test results meet all requirements of NELAP.

APPROVED:

Peter F. De Lisle, Ph.D.
Technical Director

8/22/11
Date

Deviations from, additions to, or exclusions from the test method, non-standard conditions or data qualifiers and, as appropriate, a statement of compliance/non-compliance: **NONE**

VELAP# 460030
EPA# VA01116

December 15, 2011

Mr. Robert Williams, Jr.
Lawrenceville Water Treatment Plant
380 Meadow Lane
Lawrenceville, VA 23868

Re: Quarterly Whole Effluent Toxicity (WET) Testing Results; CHA Project Number: 22051

Dear Mr. Williams:

Enclosed are three copies of the report which describes the performance and the results of the first quarter chronic toxicity testing performed for the Lawrenceville Wastewater Treatment Plant. Testing consisted of a 7-day chronic fathead minnow (*Pimephales promelas)* survival and growth test using 24-hour composite effluent samples from Outfall 001. The enclosed report provided by Coastal Bioanalysts includes results summary pages, raw data, statistical analyses, and chain of custody documentation. CHA Consulting, Inc. has reviewed the report and approved the test methods and results.

The results of this testing indicate that the effluent exhibited no chronic toxicity to the fathead minnows. The toxicity end-points for the chronic test are summarized as follows:

Testing Dates	Testing Performed	Toxicity End-Point (% Effluent)	
		NOEC	TU_c (100/NOEC)
11/29/2011 – 12/6/2011	7-day Chronic Fathead Minnow	100%	1.0

NOEC: No Observed Effect Concentration. TU_c: Chronic Toxicity Unit = 100 / NOEC.

I have provided for your review three copies of each report, two copies of which must be submitted to the VDEQ.

We remain available to discuss the test results or report at your convenience. As always, please do not hesitate to contact me should you have any questions, comments, or additional needs.

Very truly yours,

R. Lawrence Hoffman

R. Lawrence Hoffman
Vice President

RLH/mlc
Enclosures

Client: Olver, Inc.
Project ID: OLVR1154
Client Sample ID: Lawrenceville WWTP outfall 001
Permit No: VA0020354
Sample Period: 11/28/11to 12/1/11 NTP 22051.1001.44000

Coastal Bioanalysts, Inc.

Report of Analysis: Whole Effluent Toxicity (WET)

Submitted To:	**Prepared By:**
Ms. Ashley Ruble Olver, Inc. 1116 South Main Street Blacksburg, VA 24060	Coastal Bioanalysts, Inc. 6400 Enterprise Court Gloucester, VA 23061 (804) 694-8285 www.coastalbio.com Contact: Peter F. De Lisle, Technical Director

Chronic Test Results*

Species-Test Method	Endpoint	NOEC	LOEC	ChrV	PMSD	T.U.$_C$	IC25	48-h LC50	LC50 95% C.L.	T.U.$_{Ac}$
P. promelas	Survival	100	>100	>100	N/A	1.00	N/A	>100	N/A	<1.00
EPA 1000.0	Biomass	100	>100	>100	17	1.00	>100	N/A	N/A	N/A

*Note: Details regarding test conduct and data analysis provided in attached bench sheets and printouts as applicable.

Chronic Test Biological Summary Data		Sample Concentration (%)					
Species-Method	Endpoint	Control	33.0	44.0	68.0	76.0	100
P. promelas EPA 1000.0	Survival (%):	100	100	100	100	98	98
	Biomass (mg):	0.715	0.623	0.623	0.629	0.614	0.649

Test Information Species-Method	Start Date/Time End Date/Time	Organism Source	Hatch/Harvest Date/Time	Acclimation Temp.	Acclimation Water	Test Aerated?
P. promelas EPA 1000.0	11/29/11 1450 12/6/11 1435	CBI Stock	11/28/11 1630 11/29/11 0830	25° C	Mod. Hard Syn. FW	No

Sample/Dilution Water Data	Chronic Test			
	Sample		Dilution Water*	
Water Quality Parameter (Units)	Mean	Std. Dev.	Mean	Std. Dev.
Arrival Temperature (°C)	1	0	N/A	N/A
Use Temperature (°C)	25	0	25	0.5
Conductivity (µS/cm)	348	10	297	2.6
pH (S.U.)	7.55	0.08	7.64	0.02
Dissolved Oxygen (mg/l)	8.2	0	8.2	0.1
Total Hardness (mg/l as $CaCO_3$)	59	9.0	86	3.7
Alkalinity (mg/l as $CaCO_3$)	68	3.2	61	2.6
Total Residual Chlorine (mg/l)	<Q.L.	0	N/A	N/A
Ammonia (mg/l NH_3-N)	<1.0	0	N/A	N/A

*Dilution water = Moderately hard synthetic freshwater

Sample Aging/Use/Pretreatment

CBI Sample I.D.	Collection Date/Time	Date(s)/Time(s) 1st Used in Tests	Date(s)/Time(s) Used in Renewals	Sample Adjustments
OLVR1154-A	11/28/11 1200	11/29/11 1450	N/A	Aerated 4 min
OLVR1154-B	11/29/11 1200	11/30/11 1610	12/1/11 1530	Aerated 3-4 min
OLVR1154-C	12/1/11 1200	12/2/11 1600	12/3/11 1545 12/4/11 1500 12/5/11 1425	Aerated 3 min

VELAP# 460030
EPA# VA01116

Client: Olver, Inc.
Project ID: OLVR1154
Client Sample ID: Lawrenceville WWTP outfall 001
Permit No: VA0020354
Sample Period: 11/28/11to 12/1/11 NTP 22051.1001.44000

Coastal Bioanalysts, Inc.

Chronic Test Water Quality (Mean/Std. Dev.)						
Test:	*P. promelas* 1000.0					
% Conc:	**Cont.**	**33.0**	**44.0**	**68.0**	**76.0**	**100**
Temp. (°C)	24 0.5	24 0.5	24 0.5	24 0.5	24 0.5	24 0.5
D.O. (mg/l)	7.8 0.5	7.8 0.6	7.8 0.5	7.8 0.5	7.8 0.6	7.8 0.5
pH (S.U.)	7.45 0.16	7.44 0.15	7.43 0.15	7.42 0.15	7.40 0.15	7.39 0.14
Cond. (µS/cm)	296 3.5	317 5.3	322 4.4	329 5.2	337 5.9	350 7.0

Chronic Test QA/QC Reference Toxicant: KCl Units: mg/l Test Organism Source: CBI Stock Cultures									
Species-Method (Ref. Test Date)	**Data Source**	**% Survival**		**Biomass (mg)**					**RTT in Control?**
		Cont.	**NOEC**	**Cont.**	**NOEC**	**PMSD**	**IC25**	**IC25 A.L.**	
P. promelas 1000.0	RTT	98	500	0.79	500	16	622	N/A	Yes
(11/8/11-11/15/11)	CC	98	500	0.77	500	15	607	560-655	

Note: RTT = Reference Toxicant Test, CC = Control Chart, Cont. = Control group.

The results of analysis contained within this report relate only to the sample as received in the laboratory. This report shall not be reproduced except in full without written approval from the laboratory. Unless noted below, these test results meet all requirements of NELAP.

APPROVED:

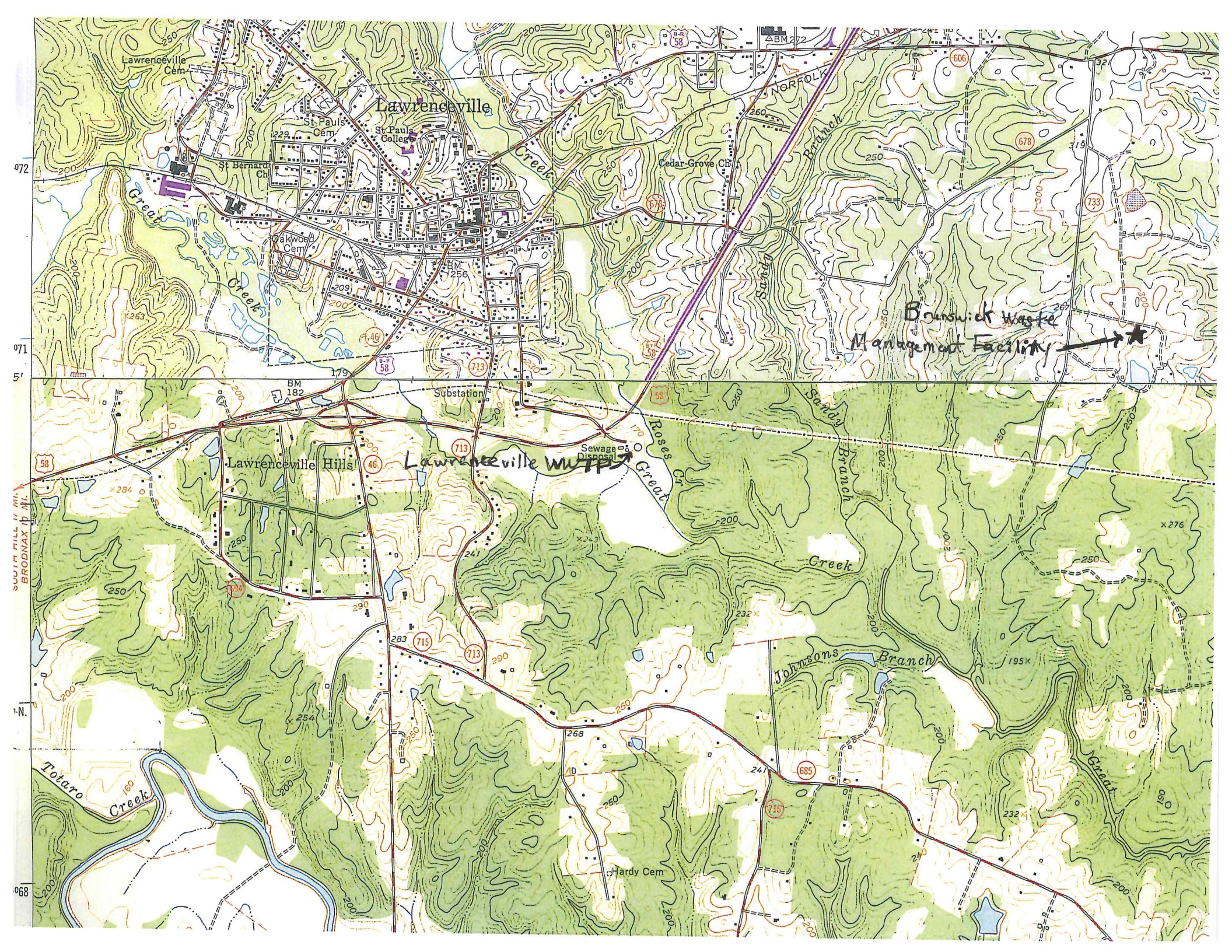
Peter F. De Lisle, Ph.D.
Technical Director

12/13/11
Date

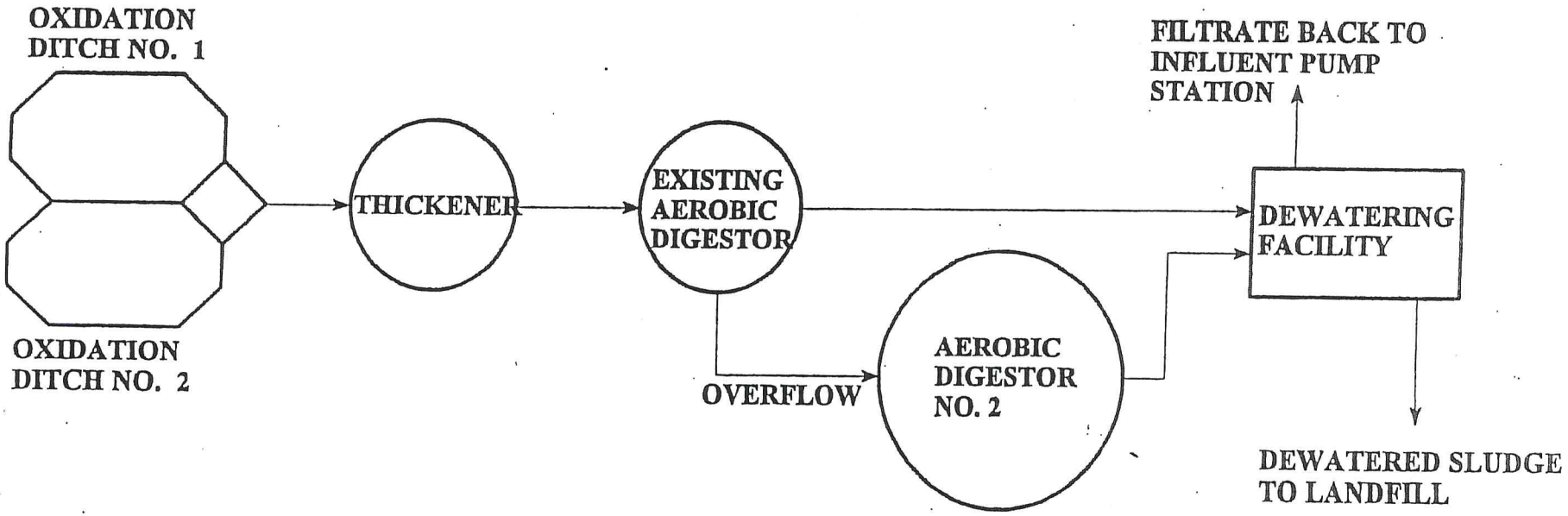
Deviations from, additions to, or exclusions from the test method, non-standard conditions or data qualifiers and, as appropriate, a statement of compliance/non-compliance: **NONE**

VELAP# 460030
EPA# VA01116

ATTACHMENT E


Lawrenceville
Lawrenceville Cem
St Paul's Cem
St Paul's College
St Bernard Ch
Oakwood Cem
Great Creek
Cedar Grove Ch
Sandy Branch
NORFOLK
Brunswick Waste Management Facility
BM 182
Substation
Lawrenceville Hills
Lawrenceville WWTP
Sewage Disposal
Roses Cr
Great Creek
Sandy Branch Creek
Johnsons Branch
Totaro Creek
Hardy Cem
THM 256
BM 272

ATTACHMENT F



SLUDGE FLOWS

2.0.6 Sludge Handling system

The sludge handling system includes waste activated sludge (WAS) pumps, which are an integral part of the secondary treatment system). See Figure 2.0-8 -Sludge Handling System Layout for location of equipment.

The sludge wasting pumps convey the sludge to the thickener. Following thickening the sludge is routed to Digester No. 1 and then to Digester No. 2.

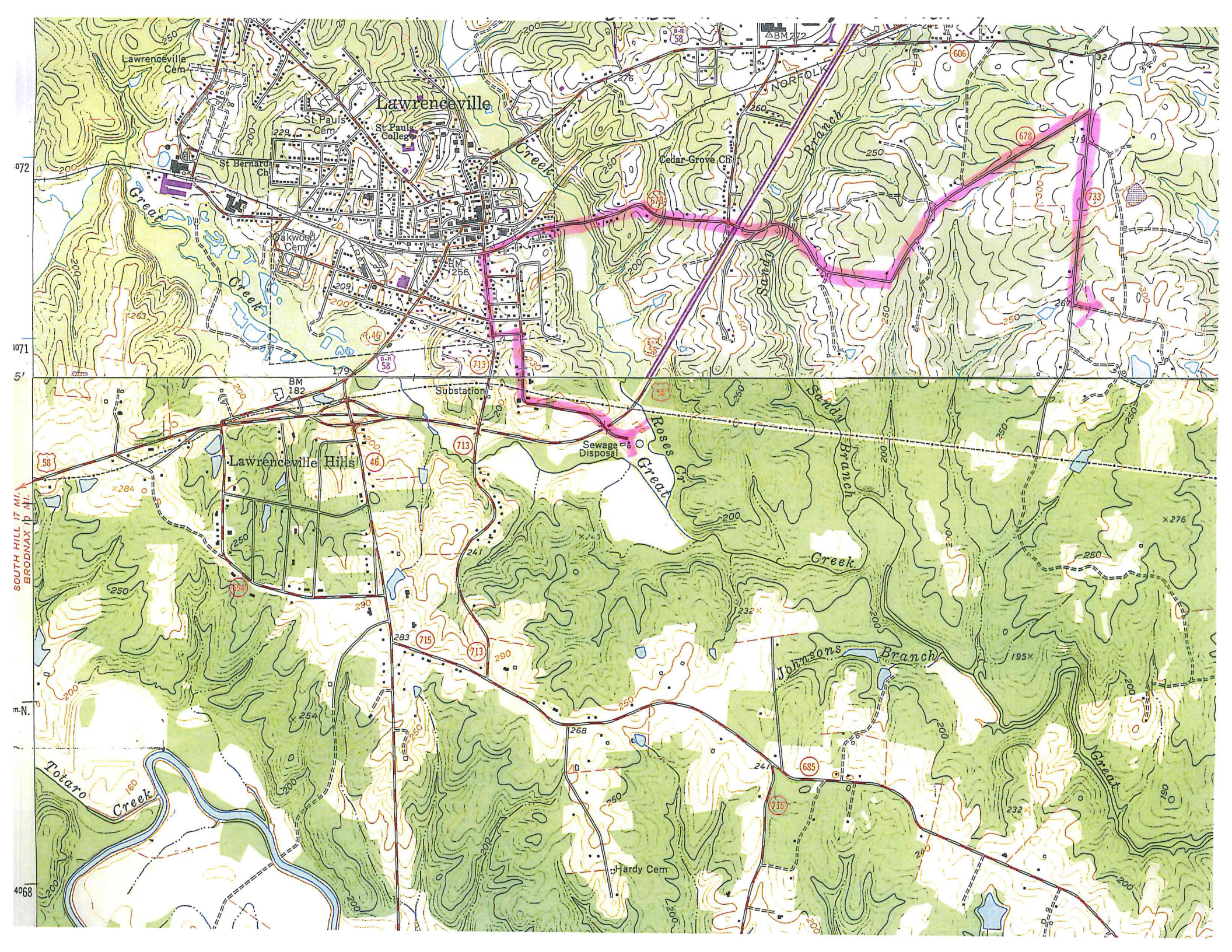
Sludge aeration in the aerobic digester helps support biological growth, removing nutrients and stabilizing the sludge. Mixing and oxygen requirements are met by surface aerators. Supernatant is decanted from the top tanks through telescopic valve arrangements and is returned to the head of the plant through the plant drain system for further processing.

Stabilized digested sludge is pumped to the dewatering building. Dewatered sludge is trucked to the Brunswick County Solid Waste Management facility, where it is land filled.

2.1 Raw Sewage Characteristics

Sewage flow-rates vary over a wide range depending on such things as time of day, infiltration and inflow, seasonal variations, etc. Influent flow rates at the plant can be expected

ATTACHMENT G


Lawrenceville
Lawrenceville Cem
St Pauls Cem
St Pauls College
St Bernard Ch
Oakwood Cem
Great Creek
Cedar Grove Ch
Sandy Branch
NORFOLK
BM 256
BM 182
Substation
Lawrenceville Hills
Sewage Disposal
Roses Cr
Great Creek
Sandy Branch
Johnsons Branch
Totaro Creek
Hardy Cem
SOUTH HILL 17 MI.
BRODNAX 10 MI.

ATTACHMENT H